

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.95
Test oil : ISO 4113
Combination No. : 0403246047
Injection pump
Pump designation : PES6MW100/720RS1522
EP type number : 0413206023
Governor
Governor design. : RQV300...1300MW148
: -4
Governor no. : 0420083325
Cust. part No. : 0250744802

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 155.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test Lines : 1680750089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : ..00
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 13.30
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 3.0
Speed

Tolerance
 cm3/1000 strokes : 4.5

 Check tolerance
 cm3/1000S. : 7.0
 2nd speed rpm : 300
 Rack travel in mm : 4.40
 Tolerance mm : + 0.10
 Del. quantity
 cm3/1000 strokes : 12.0
 Tolerance
 cm3/1000 strokes : + 2.0
 Check tolerance
 cm3/1000S. : + 4.5
 Spread
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.92
 Tolerance mm : + 0.25
 Rated speed rpm : 1355
 guide sleeve
 travel mm : 9.32
 Tolerance mm : + 0.25
 Rated speed rpm : 1078
 guide sleeve
 travel mm : 7.06
 Tolerance mm : + 0.25
 Rated speed rpm : 514
 guide sleeve
 travel mm : 2.14
 Tolerance mm : + 0.25
 Rated speed rpm : 564
 guide sleeve
 travel mm : 2.60
 Tolerance mm : + 0.25
 Rated speed rpm : 740
 guide sleeve
 travel mm : 3.93
 Tolerance mm : + 0.25
 Rated speed rpm : 1720

guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 10.00
 Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm3/1000 strokes : 118.0
 Tolerance
 cm3/1000 strokes : + 1.0
 Check tolerance
 cm3/1000S. : + 3.0
 Spread
 Tolerance
 cm3/1000 strokes : 4.5
 Check tolerance
 cm3/1000S. : 7.0

RATED SPEED

control lever
 position degree : 120.0
 tolerance degree : + 4.0
 rack travel mm : 12.30
 Rated speed rpm : 1345
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1475
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1600

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.40
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 5.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 4.30
Tolerance mm : \pm 0.10

Pressure hPa : 300
rack travel mm : 1.20
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 200
Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 117.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed

Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.95
Test oil : ISO 4113

Combination No. : 0403246048

Injection pump
Pump designation : PES6MW100/720RS1522
EP type number : 0413206023

Governor
Governor design. : RQV300...1300MW148
: -5
Governor no. : 0420083326

Cust. part No. : 0250744902

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 155.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 118.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0

2nd speed rpm : 300

Rack travel in mm : 4.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spreed
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 0.92
Tolerance mm : ± 0.25

Rated speed rpm : 1355
guide sleeve
travel mm : 9.32
Tolerance mm : ± 0.25

Rated speed rpm : 1078
guide sleeve
travel mm : 7.06
Tolerance mm : ± 0.25

Rated speed rpm : 514
guide sleeve
travel mm : 2.14
Tolerance mm : ± 0.25

Rated speed rpm : 564
guide sleeve
travel mm : 2.60
Tolerance mm : ± 0.25

Rated speed rpm : 740
guide sleeve
travel mm : 3.93
Tolerance mm : ± 0.25

Rated speed rpm : 1720

guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 10.00
Tolerance mm : ± 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 118.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : ± 4.0

rack travel mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.40
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 5.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 800
rack travel mm : 4.30
Tolerance mm : \pm 0.10

Pressure hPa : 300
rack travel mm : 1.20
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 200
Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 117.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 1300
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm	:	300
rack travel mm	:	4.40
Tolerance mm	:	± 0.10
Del. quantity		
cm ³ /1000 strokes	:	12.0
Tolerance		
cm ³ /1000 strokes	:	± 2.0
Check tolerance		
cm ³ /1000s.	:	± 4.5
Speed		
Tolerance		
cm ³ /1000 strokes	:	2.0
Check tolerance		
cm ³ /1000s.	:	4.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.95
Test oil : ISO 4113
Combination No. : 0403246049
Injection pump
Pump designation : PES6MW100/720RS1523
EP type number : 0413206024
Governor
Governor design. : RQV300...1300MW148
: -6
Governor no. : 0420083327
Cust. part No. : 0250745002

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 125.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : .00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 96.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm3/1000 strokes : 4.5

Check tolerance
cm3/1000S. : 7.0

2nd speed rpm : 300

Rack travel in mm : 3.50
Tolerance mm : ± 0.20

Del. quantity
cm3/1000 strokes : 12.0

Tolerance
cm3/1000 strokes : ± 2.0

Check tolerance
cm3/1000S. : ± 4.5

Spreed
Tolerance
cm3/1000 strokes : 2.0

Check tolerance
cm3/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 0.92
Tolerance mm : ± 0.25

Rated speed rpm : 1214
guide sleeve
travel mm : 8.08
Tolerance mm : ± 0.25

Rated speed rpm : 1031
guide sleeve
travel mm : 6.74
Tolerance mm : ± 0.25

Rated speed rpm : 514
guide sleeve
travel mm : 2.14
Tolerance mm : ± 0.25

Rated speed rpm : 564
guide sleeve
travel mm : 2.60
Tolerance mm : ± 0.25

Rated speed rpm : 740
guide sleeve
travel mm : 3.93
Tolerance mm : ± 0.25

Rated speed rpm : 1720

guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 10.00
Tolerance mm : ± 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 96.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Spreed
Tolerance
cm3/1000 strokes : 4.5

Check tolerance
cm3/1000S. : 7.0

RATED SPEED

control lever
position degree : 115.0
tolerance degree : ± 4.0

rack travel mm : 10.20
Rated speed rpm : 1245
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1370
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.50
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 4.20

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.25
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 11.25
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 11.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 1.40
Tolerance mm : \pm 0.10

Pressure hPa : 250
rack travel mm : 0.70
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 220
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 87.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 57.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.20
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm	:	300
rack travel mm	:	3.50
Tolerance mm	:	+ 0.20
Del. quantity		
cm ³ /1000 strokes	:	12.0
Tolerance		
cm ³ /1000 strokes	:	+ 2.0
Check tolerance		
cm ³ /1000S.	:	+ 4.5
Spreed		
Tolerance		
cm ³ /1000 strokes	:	2.0
Check tolerance		
cm ³ /1000S.	:	4.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.02.95
Test oil : ISO 4113

Combination No. : 0403476127

Injection pump
Pump designation : PES6MW100/720RS1205
EP type number : 0413406195

Governor
Governor design. : RSV750...1250MWOA325
: -5
Governor no. : 0420085208

Cust. part No. : 0240743402

Customer spec. information

Customer : MB-NFZ
Motor : OM 366 LA
Power KW : 185.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 0.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1230

Rack travel in mm : 15.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 122.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

2nd speed rpm : 750

Rack travel in mm : 5.20

Tolerance mm : \pm 0.50

Del. quantity
cm3/1000 strokes : 12.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Spread

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : \pm 0.35

governor spring
pre-tension
click setting x : 1.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1230
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 122.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 3.0
Spread
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 6.0

RATED SPEED

control lever
position degree : 94.0
tolerance degree : \pm 4.0

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1310

LOW IDLE

control lever
position degree : 77.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 800
rack travel mm : 5.20
Tolerance mm : \pm 0.30

rack travel mm : 2.00

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1230
rack travel mm : 15.25
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 15.25
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 122.0
Tolerance
cm3/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 750
rack travel mm : 5.20
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.03.95
Test oil : ISO 4113
Combination No. : 0403246042
Injection pump
Pump designation : PES6MW100/720RS1522
EP type number : 0413206023
Governor
Governor design. : RQV300...1300MW148
 : -7
Governor no. : 0420083328
Cust. part No. : 0250748102

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 155.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test Lines : 1680750089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 21.00
Firing order : 1- 5- 3- 6- 2-
 : 4
Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 13.45
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0

2nd speed rpm : 300

Rack travel in mm : 4.20

Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 0.92
Tolerance mm : ± 0.25

Rated speed rpm : 1355
guide sleeve
travel mm : 9.32
Tolerance mm : ± 0.25

Rated speed rpm : 1078
guide sleeve
travel mm : 7.06
Tolerance mm : ± 0.25

Rated speed rpm : 514
guide sleeve
travel mm : 2.14
Tolerance mm : ± 0.25

Rated speed rpm : 564
guide sleeve
travel mm : 2.60
Tolerance mm : ± 0.25

Rated speed rpm : 740
guide sleeve
travel mm : 3.93
Tolerance mm : ± 0.25

Rated speed rpm : 1720

guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 10.00
Tolerance mm : ± 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 118.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : ± 4.0

rack travel mm : 12.45
Rated speed rpm : 1345
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.20
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 5.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.45
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.45
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 800
rack travel mm : 4.30
Tolerance mm : \pm 0.10

Pressure hPa : 300
rack travel mm : 1.20
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 200
Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 1300
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.45
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.20
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.03.95
Test oil : ISO 4113

Combination No. : 0403444154

Injection pump
Pump designation : PES4MW100/720RS1127
EP type number : 0413404103

Governor
Governor design. : RQV300...1300MW48-2
Governor no. : 0420083110

Cust. part No. : 0250746102

Customer-spec. information
Customer : MB-NFZ
Motor : OM 364 A
Power KW : 85.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

A20

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.20
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 82.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Speed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0
 2nd speed rpm : 300
 Rack travel in mm : 7.85
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.40
 Tolerance mm : + 0.25
 Rated speed rpm : 1345
 guide sleeve
 travel mm : 8.59
 Tolerance mm : + 0.25
 Rated speed rpm : 877
 guide sleeve
 travel mm : 5.00
 Tolerance mm : + 0.25
 Rated speed rpm : 363
 guide sleeve
 travel mm : 2.05
 Tolerance mm : + 0.25
 Rated speed rpm : 413
 guide sleeve
 travel mm : 2.50
 Tolerance mm : + 0.25
 Rated speed rpm : 490
 guide sleeve
 travel mm : 2.93
 Tolerance mm : + 0.25
 Rated speed rpm : 1600
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1330
 Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 82.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

RATED SPEED

control lever
 position degree : 114.0
 tolerance degree : + 4.0
 rack travel mm : 10.10
 Rated speed rpm : 1345
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1435
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 83.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.85
Tolerance mm : \pm 0.05

Rated speed rpm : 100
CRT mm min. : $>$ 9.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.20
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.90
Tolerance mm : \pm 0.15

Rated speed rpm : 585
rack travel mm : 12.10
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 11.35
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 230
Check
speed 1/min : $<$ 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 585

Del. quantity
cm³/1000 strokes : 74.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 7.85
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.03.95
Test oil : ISO 4113

Combination No. : 0403446231

Injection pump
Pump designation : PES6MW100/720RS1144
EP type number : 0413406138

Governor
Governor design. : RQV300...1400MW48-8
Governor no. : 0420083175

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680715015

Outside diameter : 6.0

x inside diameter : 3.0

A23

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 75.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0
 2nd speed rpm : 300
 Rack travel in mm : 8.05
 Tolerance mm : ± 0.25
 Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1470
 Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 75.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

RATED SPEED

control lever
 position degree : 119.0

tolerance degree : ± 4.0
 rack travel mm : 9.90
 Rated speed rpm : 1445
 Tolerance 1/min : ± 5
 rack travel mm : 4.00
 Rated speed rpm : 1550
 Tolerance 1/min : ± 15
 rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1650

LOW IDLE

control lever
 position degree : 88.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 8.05
 Tolerance mm : ± 0.25
 Rated speed rpm : 100
 CRT mm min. : > 9.50

TORQUE CONTROL

Rated speed rpm : 1400
 rack travel mm : 10.95
 Tolerance mm : ± 0.05
 Rated speed rpm : 750
 rack travel mm : 12.20
 Tolerance mm : ± 0.10
 Rated speed rpm : 950
 rack travel mm : 11.95
 Tolerance mm : ± 0.15
 Rated speed rpm : 1200
 rack travel mm : 11.15
 Tolerance mm : ± 0.15

START CUT-OUT

Rated speed rpm : > 100
 Check
 speed 1/min : > 80
 Rated speed rpm : < 200

Check
speed 1/min : < 230

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

BREAKAWAY

Rack travel in mm : 9.90
Rated speed rpm : 1445
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 8.05
Tolerance mm : ± 0.25
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.03.95
Test oil : ISO 4113
Combination No. : 0403476117
Injection pump
Pump designation : PES6MW100/72ORS1131
: -1
EP type number : 0413406165
Governor
Governor design. : RSV750...1200MWOA329
: -15
Governor no. : 0420085193
Cust. part No. : 0220748502

Customer spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 148.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750089
Outside diameter : 8.0

A26

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 3.65
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 1.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1180
Rack travel in mm : 13.15
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 104.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed

Tolerance
 cm³/1000 strokes : 3.5

 Check tolerance
 cm³/1000S. : 6.0
 2nd speed rpm : 750
 Rack travel in mm : 5.05
 Tolerance mm : + 0.25
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : + 0.35
 governor spring
 pre-tension
 click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1180
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 104.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

RATED SPEED

control lever
 position degree : 97.0
 tolerance degree : + 4.0
 rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 1400

LOW IDLE

control lever
 position degree : 76.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 750
 rack travel mm : 5.05
 Tolerance mm : + 0.25
 rack travel mm : 2.00
 Rated speed rpm : 100
 CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1180
 rack travel mm : 13.15
 Tolerance mm : + 0.05
 Rated speed rpm : 600
 rack travel mm : 13.15
 Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1000
 rack travel mm : 13.15
 Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 500

Tolerance mm : \pm 0.05
 Rated speed rpm : 500
 Pressure hPa : 500
 rack travel mm : 2.20
 Tolerance mm : \pm 0.15
 Pressure hPa : 350
 rack travel mm : 1.10
 Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1000
 Rated speed rpm : 600
 Del. quantity
 cm³/1000 strokes : 97.0
 Tolerance
 cm³/1000 strokes : \pm 1.5
 Check tolerance
 cm³/1000S. : \pm 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 7.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 43.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 105.0
 Tolerance
 cm³/1000 strokes : \pm 5.0
 Check tolerance
 cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 750

rack travel mm : 5.05
 Tolerance mm : \pm 0.25
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.95
Test oil : ISO 4113

Combination No. : 0403246043

Injection pump
Pump designation : PES6MW100/720RS1523
EP type number : 0413206024

Governor
Governor design. : RQV300...1300MW148
Governor no. : 0420083321

Cust. part No. : 0250744302

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 125.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

B01

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00

Firing order : 1- - 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 96.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
 cm³/1000S. : 7.0
 2nd speed rpm : 300
 Rack travel in mm : 3.50
 Tolerance mm : ± 0.20
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.92
 Tolerance mm : ± 0.25
 Rated speed rpm : 1354
 guide sleeve
 travel mm : 9.32
 Tolerance mm : ± 0.25
 Rated speed rpm : 1077
 guide sleeve
 travel mm : 7.05
 Tolerance mm : ± 0.25
 Rated speed rpm : 514
 guide sleeve
 travel mm : 2.14
 Tolerance mm : ± 0.25
 Rated speed rpm : 564
 guide sleeve
 travel mm : 2.60
 Tolerance mm : ± 0.25
 Rated speed rpm : 740
 guide sleeve
 travel mm : 3.93
 Tolerance mm : ± 0.25
 Rated speed rpm : 1720
 guide sleeve
 travel mm : 13.50
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 10.00
 Tolerance mm : ± 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 96.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spread
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

RATED SPEED

control lever
 position degree : 118.0
 tolerance degree : ± 4.0
 rack travel mm : 10.20
 Rated speed rpm : 1345
 Tolerance 1/min : ± 5
 rack travel mm : 4.00
 Rated speed rpm : 1450
 Tolerance 1/min : ± 15
 rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 73.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 3.50
 Tolerance mm : ± 0.10

Rated speed rpm : 200
CRT mm min. : > 4.20

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.25
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 11.25
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 11.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 1.40
Tolerance mm : \pm 0.10

Pressure hPa : 250
rack travel mm : 0.70
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 87.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 57.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.20
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm	:	300
rack travel mm	:	3.50
Tolerance mm	:	+ 0.20
Del. quantity		
cm ³ /1000 strokes	:	12.0
Tolerance		
cm ³ /1000 strokes	:	+ 2.0
Check tolerance		
cm ³ /1000s.	:	+ 4.5
Speed		
Tolerance		
cm ³ /1000 strokes	:	2.0
Check tolerance		
cm ³ /1000s.	:	4.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.10.93
Test oil : ISO 4113

Combination No. : 0402646994

Injection pump
Pump designation : PE6P120A320LS7852
EP type number : 0412626871

Governor
Governor design. : RQ300/950PA1032-3
Governor no. : 0421801654

Cust. part No. : 0230744202

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 LA
Power KW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

B05

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 1.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Spread	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0
2nd speed rpm	: 300
Rack travel in mm	: 5.90
Tolerance mm	: + 0.30
Del. quantity	
cm3/1000 strokes	: 19.0
Tolerance	
cm3/1000 strokes	: + 3.0
Check tolerance	
cm3/1000S.	: + 6.0
Spread	
Tolerance	
cm3/1000 strokes	: 6.0
Check tolerance	
cm3/1000S.	: 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve	
travel mm	: 2.16
Tolerance mm	: + 0.10
Rated speed rpm	: 1009
guide sleeve	
travel mm	: 6.52
Tolerance mm	: + 0.10
Rated speed rpm	: 950
guide sleeve	
travel mm	: 6.00
Tolerance mm	: + 0.10
Rated speed rpm	: 401
guide sleeve	
travel mm	: 4.53
Tolerance mm	: + 0.10
Rated speed rpm	: 500
guide sleeve	
travel mm	: 6.00

Tolerance mm	: + 0.10
Rated speed rpm	: 1170
guide sleeve	
travel mm	: 11.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 600
Rack travel in mm	: 20.00
Tolerance mm	: + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure	
hPa	: 1100
Del. quantity	
cm3/1000 strokes	: 235.0
Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Spread	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0

RATED SPEED

control lever	
position degree	: 97.0
tolerance degree	: + 4.0
rack travel mm	: 13.00
Rated speed rpm	: 998
Tolerance 1/min	: + 8
rack travel mm	: 4.00
Rated speed rpm	: 1080
Tolerance 1/min	: + 15
rack travel mm	: 0.75
Tolerance mm	: + 0.75
Rated speed rpm	: 1200

LOW IDLE

control lever	
position degree	: 73.0
tolerance degree	: + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 8.30

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 14.05
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 14.05
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1100
rack travel mm : 14.05
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 400

Pressure hPa : -
rack travel mm : 10.05
Tolerance mm : \pm 0.15

Pressure hPa : 250
rack travel mm : 11.40
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 230.0

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 204.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 998
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.30
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.90
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.04.94
Test oil : ISO 4113

Combination No. : 0402646793A

Injection pump
Pump designation : PE6P120A320LS7846
EP type number : 0412626865

Governor
Governor design. : RQ300/1050PA1030-8
Governor no. : 0421801673

Cust. part No. : 0230749502

Customer-spec. information

Customer : MB-NFZ
Motor : OM401 LA
Power KW : 213.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

B09

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.35
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 202.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.58
Tolerance mm : \pm 0.10

Rated speed rpm : 1103
guide sleeve
travel mm : 6.37
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 394

guide sleeve
travel mm : 4.78
Tolerance mm : \pm 0.10

Rated speed rpm : 480
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1280
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 800

Del. quantity
cm³/1000 strokes : 202.0
Tolerance

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 93.0
tolerance degree : \pm 4.0

rack travel mm : 11.35
Rated speed rpm : 1098
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1180
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.70
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 380
Tolerance 1/min : \pm 20

Rated speed rpm : 200
CRT mm min. : $>$ 8.00

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 550
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 400
rack travel mm : 11.50
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 800
rack travel mm : 12.35
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 10.25
Tolerance mm : \pm 0.15

Rated speed rpm : 400

Pressure hPa : 200

B11

rack travel mm : 10.70
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 11.50
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 197.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 350
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 11.35
Rated speed rpm : 1098
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.10
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000s. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.70
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.10.94
Test oil : ISO 4113

Combination No. : 0402646994

Injection pump
Pump designation : PE6P120A320LS7852
EP type number : 0412626871

Governor
Governor design. : RQ300/950PA1032-13
Governor no. : 0421801747

Cust. part No. : 0230744202

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 LA
Power KW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 248.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.90
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.16
Tolerance mm : ± 0.10

Rated speed rpm : 1009
guide sleeve
travel mm : 6.52
Tolerance mm : ± 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 401
guide sleeve
travel mm : 4.53
Tolerance mm : ± 0.10

Rated speed rpm : 500

guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1170
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1100
Del. quantity
cm³/1000 strokes : 248.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 97.0
tolerance degree : ± 4.0

rack travel mm : 13.40
Rated speed rpm : 998
Tolerance 1/min : ± 8

rack travel mm : 4.00
Rated speed rpm : 1080
Tolerance 1/min : ± 15

rack travel mm : 0.75
Tolerance mm : ± 0.75
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : \pm 20

Rated speed rpm : 200
CRT mm min. : $>$ 8.30

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.40
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 14.40
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1100
rack travel mm : 14.40
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 10.35
Tolerance mm : \pm 0.20

Rated speed rpm : 400

Pressure hPa : 550
rack travel mm : 13.60
Tolerance mm : \pm 0.10

Pressure hPa : 250
rack travel mm : 11.45
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 220
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 208.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : 1100
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 136.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.40
Rated speed rpm : 998

Tolerance 1/min : + 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.90
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.07.93

Test oil : ISO 4113

Combination No. : 0400846591

Injection pump

Pump designation : PES6A95D410RS2797

EP type number : 0410896900

Governor

Governor design. : RQV300...1400AB1065

: -22L

Governor no. : 0420212226

Cust. part No. : 020 074 4902

Customer-spec. information

Customer : MB-NFZ

Motor : OM 366

Power KW : 97.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde assembly

: 0681343009

Opening pressure bar

: 173.5

Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 1.5

B17

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Prestroke mm : 3.25

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.15

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 62.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 3.0

Speed

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 62.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

RATED SPEED

control lever
position degree : 110.0
tolerance degree : \pm 4.0
rack travel mm : 9.10
Rated speed rpm : 1455
Tolerance 1/min : \pm 5
rack travel mm : 4.00
Rated speed rpm : 1555
Tolerance 1/min : \pm 15
rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1670

LOW IDLE

control lever
position degree : 63.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 9.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : $>$ 9.80

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 575

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 10.15
Tolerance mm : \pm 0.05

Rated speed rpm : 400
rack travel mm : 11.60
Tolerance mm : \pm 0.10

Rated speed rpm : 10
rack travel mm : 11.25
Tolerance mm : \pm 0.15

Rated speed rpm : 925
rack travel mm : 10.75
Tolerance mm : \pm 0.15

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 240
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 50.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -

Rated speed rpm : 630
Del. quantity
cm³/1000 strokes : 51.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 925
Del. quantity
cm³/1000 strokes : 57.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.5

BREAKAWAY

Rack travel in mm : 9.10
Rated speed rpm : 1455
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.80
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000s. : ± 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.08.93
Test oil : ISO 4113
Combination No. : 0400674049
Injection pump
Pump designation : PE4A95D42ORS2662-1
EP type number : 0410694994
Governor
Governor design. : RSV350...1100A8C2222
: -3R
Governor no. : 0420233340
Cust. part No. : 4404 084 M91

Customer-spec. information
Customer : HANOMAG
Motor : D944T
Power KW : 97.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : DAUERENTL.
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1680750003
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.20
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- - 4- 3
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 11.25
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 113.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

2nd speed rpm : 350

Rack travel in mm : 6.30
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 113.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

RATED SPEED

control lever
position degree : 103.0
tolerance degree : + 4.0

rack travel mm : 10.25
Rated speed rpm : 1145
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1225

LOW IDLE

control lever
position degree : 2.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 5.80

Testing:

Rated speed rpm : 350
rack travel mm : 6.30
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 500
rack travel mm : 11.70
Tolerance mm : + 0.05

Rated speed rpm : 950
rack travel mm : 11.50
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 105.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 10.25
Rated speed rpm : 1145
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 6.30
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.09.93
Test oil : ISO 4113
Combination No. : 0400876405
Injection pump
Pump designation : PES6A95D410RS2835
EP type number : 0410896896
Governor
Governor design. : RSV400...1050A2C2263
 : -1L
Governor no. : 0420232584

Cust. part No. :

Customer-spec. information
Customer : FNH-GEOTECH
Motor : 7.5 L-8640 Trak
Power KW : 131.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Latching at 0.75 bar...0.85 bar.

Unlatching at 0.35 bar...0.45 bar.

Start-of-delivery blocking at start of delivery of cylinder no. 1.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.60
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300

Tolerance : ± 0.50

Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 113.0

Tolerance
cm3/1000 strokes : +- 2.0

Check tolerance
cm3/1000S. : +- 4.5

Spreed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

2nd speed rpm : 450

Rack travel in mm : 5.00
Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 15.0

Tolerance
cm3/1000 strokes : +- 2.0

Check tolerance
cm3/1000S. : +- 4.5

Spreed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Del. quantity
cm3/1000 strokes : 113.0

Tolerance
cm3/1000 strokes : +- 2.0

Check tolerance
cm3/1000S. : +- 4.5

Spreed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

RATED SPEED

control lever
position degree : 99.0
tolerance degree : +- 4.0

rack travel mm : 11.20

rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 74.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 450
rack travel mm : 5.00
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 600
Tolerance 1/min : +- 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.20
Tolerance mm : +- 0.10

Rated speed rpm : 750
rack travel mm : 14.10
Tolerance mm : +- 0.10

Rated speed rpm : 925
rack travel mm : 13.25
Tolerance mm : +- 0.15

Rated speed rpm : 1050
rack travel mm : 11.70
Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
rack travel mm : 14.10
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 10.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 11.80
Tolerance mm : \pm 0.20

rack travel mm : 13.55
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 11.20

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 195.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 450
rack travel mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.10.93
Test oil : ISO 4113
Combination No. : 0400864094
Injection pump
Pump designation : PES4A90D320/3RS2743
EP type number : 0410894034
Governor
Governor design. : RSV325...1150A5C505
 : -5R
Governor no. : 0420233289
Cust. part No. :

Customer-spec. information

Customer : MWM
Motor : TD226B-4
Power KW : 63.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1680750014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 3.00
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav.
mm : 9.00
Difference ° CS : 4.00
Tolerance : ± 0.50

BASIC SETTING

Rated speed rpm : 1150
Rack travel in mm : 9.55
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 72.0
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

2nd speed rpm : 325

Rack travel in mm : 6.70
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Speed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 72.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

RATED SPEED

control lever
position degree : 100.0
tolerance degree : ± 4.0

rack travel mm : 8.50
Rated speed rpm : 1195
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1225
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1330

rack travel mm : 4.00
Rated speed rpm : 1245

LOW IDLE

control lever
position degree : 69.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 6.20

Testing:

Rated speed rpm : 325
rack travel mm : 6.70
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 445
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 9.55
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 9.60

Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 56.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 4.5

BREAKAWAY

Rack travel in mm : 8.50
Rated speed rpm : 1195
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 143.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 6.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.07.93
Test oil : ISO 4113

Combination No. : 0403474008A

Injection pump
Pump designation : PES4MW100/72ORS1181
EP type number : 0413404107

Governor
Governor design. : RSV400...1000MW1A333
Governor no. : 0420085118

Cust. part No. :

Customer-spec. information
Customer : LIEBHERR
Motor : 914 TI
Power KW : 120.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413049

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

C01

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 152.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 3.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 100.0
tolerance degree : + 4.0

rack travel mm : 11.10
Rated speed rpm : 1025
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1065
Tolerance 1/min : + 15

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1175

rack travel mm : 4.00

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 6.20

Testing:

Rated speed rpm : 400
rack travel mm : 5.70
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 510
Tolerance 1/min : + 30

Rated speed rpm : 70

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 12.15
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 12.15
Tolerance mm : + 0.05

Rated speed rpm : 450
rack travel mm : 13.10
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

BREAKAWAY

Rack travel in mm : 11.10
Rated speed rpm : 1025
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.10.93
Test oil : ISO 4113

Combination No. : 0403474008D

Injection pump
Pump designation : PES4MW100/72ORS1181
EP type number : 0413404107

Governor
Governor design. : RSV400...1000MW1A333
Governor no. : 0420085118

Cust. part No. :

Customer-spec. information
Customer : LIEBHERR
Motor : D914TI
Power KW : 100.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413049

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

CO4

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 136.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 136.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

RATED SPEED

control lever
position degree : 94.0
tolerance degree : ± 4.0

rack travel mm : 9.90
Rated speed rpm : 925
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 968
Tolerance 1/min : ± 8

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1075

rack travel mm : 4.00
Rated speed rpm : 983

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.90

Testing:

Rated speed rpm : 400
rack travel mm : 5.40
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 510
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 11.00
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 11.00
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 11.00
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 129.5
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Speed

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 137.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.90
Rated speed rpm : 925
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.12.93
Test oil : ISO 4113

Combination No. : 0400846599

Injection pump
Pump designation : PES6A90D410RS2817
EP type number : 0410896090

Governor
Governor design. : RQV300...1100AB1262
 : -1L
Governor no. : 0420212235

Cust. part No. :

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8365.25.513

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

C07

x length mm : 600

REMARKS

Test electrically-released starting
quantity (EES) with 12 volts

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 82.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm3/1000S. : + 2.5

Spread
Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 4.5

2nd speed rpm : 300

Rack travel in mm : 7.60
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 10.0
Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.0

Spread
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1295

Rack travel in mm : 10.40
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 82.0
Tolerance
cm3/1000 strokes : + 0.5
Check tolerance
cm3/1000S. : + 2.5
Spread
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 4.5

RATED SPEED

C08

control lever
position degree : 121.0
tolerance degree : + 4.0

rack travel mm : 10.40
Rated speed rpm : 1145
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1240
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 70.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.60
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 8.40

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 500

TORQUE CONTROL

Rated speed rpm : 500
rack travel mm : 12.15
Tolerance mm : + 0.05

Rated speed rpm : 880
rack travel mm : 11.90
Tolerance mm : + 0.10

Rated speed rpm : 990
rack travel mm : 11.55
Tolerance mm : + 0.15

Rated speed rpm : 700
rack travel mm : 12.15
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 3.5

BREAKAWAY

Rack travel in mm : 10.40
Rated speed rpm : 1145
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 164.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000s. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 7.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000s. : 4.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.05.94
Test oil : ISO 4113
Combination No. : 0402046827
Injection pump
Pump designation : PES6P120A32ORS3284
EP type number : 0412026749
Governor
Governor design. : RQ275/1050PA999-3
Governor no. : 0421801598
Cust. part No. : CCEP5119A

Customer-spec. information

Customer : RVI
Motor : MIDR/PR 062045
Power KW : 186.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0

C10

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 2.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.35
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 153.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1138
Tolerance 1/min : ± 8

rack travel mm : -6.30
Rated speed rpm : 1215
Tolerance 1/min : ± 15

rack travel mm : -9.85
Tolerance mm : ± 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 252.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -5.50
Tolerance mm : ± 0.10

rack travel mm : -8.10
Rated speed rpm : 340
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm max. : < -4.00

TORQUE CONTROL

Rated speed rpm : 1050
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -2.20
Tolerance mm : ± 0.10

Rated speed rpm : 500

rack travel mm : -0.40
Tolerance mm : ± 0.20

Pressure hPa : 200
rack travel mm : -1.45
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 195
Check
speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1138
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.09.94
Test oil : ISO 4113
Combination No. : 0400865020
Injection pump
Pump designation : PES5A80D410/3RS2526
EP type number : 0410885004

Governor
Governor design. : RSV325...900A7C634
: -1L
Governor no. : 0420232603

Cust. part No. :

Customer-spec. information
Customer : KHD
Motor : F5L912
Power KW : 62.5

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992192

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 1.95
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 65.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Speed
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 3.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 65.5
Tolerance
cm³/1000 strokes : + 0.5
Check tolerance
cm³/1000S. : + 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 3.5

RATED SPEED

control lever
position degree : 58.0
tolerance degree : + 4.0

rack travel mm : 11.60
Rated speed rpm : 945
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 990
Tolerance 1/min : + 15

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 25.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 8.70

Testing:

Rated speed rpm : 325
rack travel mm : 8.20
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 460
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 12.65
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 12.70
Tolerance mm : + 0.10

BREAKAWAY

Rack travel in mm : 11.60
Rated speed rpm : 945
Tolerance 1/min : + 5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.02.95
Test oil : ISO 4113

Combination No. : 0401846471

Injection pump
Pump designation : PE6P100A720RS447
EP type number : 0411806191

Governor
Governor design. : RQ225/1200PA617
Governor no. : 0421801157

Cust. part No. : 0661514

Customer spec. information

Customer : DAF
Motor : DHT 825
Power KW : 162.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 1.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 119.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

Speed

Tolerance
 cm³/1000 strokes : 3.5

 Check tolerance
 cm³/1000S. : 6.0

 2nd speed rpm : 225

 Rack travel in mm : 5.40
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 650

 Rack travel in mm : 16.00
 Tolerance mm : + 0.40

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 119.5
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

RATED SPEED

tolerance degree : + 4.0

rack travel mm : 10.40
 Rated speed rpm : 1243
 Tolerance 1/min : + 8

 rack travel mm : 4.00
 Rated speed rpm : 1320
 Tolerance 1/min : + 15

 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1450

LOW IDLE

control lever
 position degree : 73.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 225
 rack travel mm : 5.40
 Tolerance mm : + 0.10

 rack travel mm : 2.00
 Rated speed rpm : 385
 Tolerance 1/min : + 20

 Rated speed rpm : 125

 CRT mm min. : > 6.00

TORQUE CONTROL

Rated speed rpm : 1000
 rack travel mm : 11.45
 Tolerance mm : + 0.05

 Rated speed rpm : 1200
 rack travel mm : 11.45
 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
 Pressure hPa : 700
 rack travel mm : 11.45
 Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 10.45
Tolerance mm : \pm 0.10

Rated speed rpm : 600

Pressure hPa : 315
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Pressure hPa : 270
rack travel mm : 10.70
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : > 140
Check
speed 1/min : > 160

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 94.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.40
Rated speed rpm : 1243
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 225
rack travel mm : 5.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.02.95
Test oil : ISO 4113

Combination No. : 0402736862

Injection pump
Pump designation : PES6P110A12ORS7214
EP type number : 0412716805

Governor
Governor design. : RQV350...1200PA964
: -30K
Governor no. : 0421815432

Cust. part No. : 3282469

Customer-spec. information
Customer : CUMMINS
Motor : 6CTA-A
Power KW : 213.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 120
Tolerance l/h : + 5.0

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : .40
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.30
Check
tolerance °NW : + 0.50

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
Tolerance : + 0.10
Check
tolerance °NW : + 0.23

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.75
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 192.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1260

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 192.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 66.0

tolerance degree : + 4.0

control lever
position degree : 122.0
tolerance degree : + 4.0

rack travel mm : 13.20
Rated speed rpm : 1250
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1405
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 67.0
tolerance degree : + 4.0

control lever
position degree : 15.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.70
Tolerance mm : + 0.10

Rated speed rpm : 275

CRT mm min. : > 7.20

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 423

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.75
Tolerance mm : + 0.05

Rated speed rpm : 650
rack travel mm : 12.80
Tolerance mm : + 0.20

Rated speed rpm : 1200
rack travel mm : 14.30
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 14.75
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 8.00
Tolerance mm : \pm 0.20

Rated speed rpm : 1100

Pressure hPa : 785
rack travel mm : 13.00
Tolerance mm : \pm 0.20

Pressure hPa : 335
rack travel mm : 9.65
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 290
Check
speed 1/min : $<$ 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 184.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 92.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.20
Rated speed rpm : 1250
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.95
Test oil : ISO 4113

Combination No. : 0402746645

Injection pump
Pump designation : PES6P120A32ORS7364
EP type number : 0412726930

Governor
Governor design. : RQV300...1050PA1204
Governor no. : 0421814123

Cust. part No. : CCEP 5148 66-236

Customer-spec. information
Customer : RVI
Motor : MIDR 06.20.45D41
Power KW : 217.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.25
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.60
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 278.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : -7.30
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.33
Tolerance mm : + 0.25

Rated speed rpm : 1135
guide sleeve
travel mm : 8.45
Tolerance mm : + 0.25

Rated speed rpm : 752
guide sleeve
travel mm : 6.09
Tolerance mm : + 0.25

Rated speed rpm : 365
guide sleeve
travel mm : 2.40
Tolerance mm : + 0.25

Rated speed rpm : 415
guide sleeve
travel mm : 3.28
Tolerance mm : + 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 3.86
Tolerance mm : + 0.25

Rated speed rpm : 1460
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1230

Rack travel in mm : 11.70
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 278.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 302.0
tolerance degree : + 4.0

rack travel mm : -1.00
Rated speed rpm : 1120
Tolerance 1/min : + 5

rack travel mm : -9.60
Rated speed rpm : 1290
Tolerance 1/min : + 15

rack travel mm : -13.10
Tolerance mm : + 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 267.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 200
CRT mm max. : $<$ -4.80

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 360

TORQUE CONTROL

Rated speed rpm : 600
Rated speed rpm : 1050
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -2.10
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 240
rack travel mm : -1.45
Tolerance mm : \pm 0.15

Pressure hPa : 400
rack travel mm : -0.50
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 230
Check
speed 1/min : $<$ 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 290.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 182.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1120
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : -7.30
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.02.95
Test oil : ISO 4113

Combination No. : 0402776806

Injection pump
Pump designation : PES6P120A720LS7120
EP type number : 0412726803

Governor
Governor design. : RSV350...1050POA529
: -3
Governor no. : 0421833317

Cust. part No. : 0170746502

Customer-spec. information
Customer : MB-NFZ
Motor : OM447 A
Power KW : 213.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 650

Rack travel in mm : 14.10

Rack travel in mm : 14.10
Tolerance mm : \pm 0.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 202.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 5.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 650
Aneroid pressure
hPa : 650

Del. quantity
cm³/1000 strokes : 202.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 45.0
tolerance degree : \pm 4.0

LOW IDLE

control lever
position degree : 22.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.70
Tolerance mm : \pm 0.10

SET IDLE AUXILIARY SPRING

Rated speed rpm : 350
rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 650
rack travel mm : 14.10
Tolerance mm : \pm 0.10

Rated speed rpm : 1030
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 13.80
Tolerance mm : \pm 0.10

Rated speed rpm : 875
rack travel mm : 14.30
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 14.80

Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

MEASUREMENT

Pressure hPa : 300
rack travel mm : -1.60
Tolerance mm : + 0.05

Pressure hPa : 400
rack travel mm : -0.70
Tolerance mm : + 0.10

Pressure hPa : 850
rack travel mm : 0.40
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1030
Del. quantity
cm³/1000 strokes : 191.5
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 216.5
Tolerance
cm³/1000 strokes : + 2.5
Check tolerance
cm³/1000S. : + 5.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 143.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 5.70
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.95

Test oil : ISO 4113

Combination No. : 0402846301

Injection pump

Pump designation : PE6P120A32ORS8508

EP type number : 0412826201

Governor

Governer design. : RQV275...1000PA1099K

Governer no. : 0421815983

Cust. part No. : 1287579/4

Customer-spec. information

Customer : DAF

Motor : WS 315 M

Power KW : 315.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 180

Tolerance l/h : ± 10.0

Test nozzle holde

assembly : 1688901105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 5.35

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 321.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 5.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 275

Rack travel in mm : 5.80
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 13.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 2.14
Tolerance mm : + 0.15

Rated speed rpm : 1050
guide sleeve
travel mm : 9.89
Tolerance mm : + 0.20

Rated speed rpm : 692
guide sleeve
travel mm : 6.45
Tolerance mm : + 0.25

Rated speed rpm : 284

guide sleeve
travel mm : 2.27
Tolerance mm : + 0.25

Rated speed rpm : 334
guide sleeve
travel mm : 3.08
Tolerance mm : + 0.25

Rated speed rpm : 400
guide sleeve
travel mm : 3.92
Tolerance mm : + 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1130

Rack travel in mm : 12.70
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 321.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 5.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : + 4.0

rack travel mm : 12.35
Rated speed rpm : 1037
Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1150
 Tolerance 1/min : + 15

rack travel mm : 0.70
 Tolerance mm : + 0.70
 Rated speed rpm : 1275

LOW IDLE

control lever
 position degree : 76.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 275
 rack travel mm : 5.80
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 405
 Tolerance 1/min : + 20

Rated speed rpm : 175
 CRT mm min. : > 8.00

TORQUE CONTROL

Rated speed rpm : 980
 rack travel mm : 13.35
 Tolerance mm : + 0.05

Rated speed rpm : 750
 rack travel mm : 12.75
 Tolerance mm : + 0.05

Rated speed rpm : 600
 rack travel mm : 12.05
 Tolerance mm : + 0.10

Rated speed rpm : 500
 rack travel mm : 12.00
 Tolerance mm : + 0.10

Rated speed rpm : 400
 rack travel mm : 11.95
 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

D02

Rated speed rpm : 980
 Pressure hPa : 1500
 rack travel mm : 13.35
 Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 980
 rack travel mm : 8.90
 Tolerance mm : + 0.10

Rated speed rpm : 980

Pressure hPa : 750
 rack travel mm : 12.25
 Tolerance mm : + 0.05

Pressure hPa : 420
 rack travel mm : 10.00
 Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : -
 Rated speed rpm : 750
 Del. quantity
 cm³/1000 strokes : 316.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 13.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 600
 Del. quantity
 cm³/1000 strokes : 188.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 5.0

BREAKAWAY

Rack travel in mm : 12.35
 Rated speed rpm : 1037
 Tolerance 1/min : + 5

LOW IDLE

Rated speed rpm : 275
rack travel mm : 5.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 13.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.02.95
Test oil : ISO 4113
Combination No. : 0403446317
Injection pump
Pump designation : PES6MW100/320RS1214
: -1
EP type number : 0413406224
Governor
Governor design. : RQV275...1250MW115K
Governor no. : 0420083994

Cust. part No. :

Customer-spec. information

Customer : RVI
Motor : MIDR 060226 W
Power KW : 151.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413033

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 2.00
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 14.15

Rack travel in mm : 14.15
Tolerance mm : ± 0.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 119.0

Tolerance	
cm ³ /1000 strokes	: + 1.0
Check tolerance	
cm ³ /1000S.	: + 3.0
Spread	
Tolerance	
cm ³ /1000 strokes	: 3.5
Check tolerance	
cm ³ /1000S.	: 6.0
2nd speed rpm	: 275
Rack travel in mm	: -8.10
Tolerance mm	: + 0.20
Del. quantity	
cm ³ /1000 strokes	: 20.0
Tolerance	
cm ³ /1000 strokes	: + 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
Spread	
Tolerance	
cm ³ /1000 strokes	: 3.5
Check tolerance	
cm ³ /1000S.	: 5.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 275
guide sleeve	
travel mm	: 1.00
Tolerance mm	: + 0.25
Rated speed rpm	: 1344
guide sleeve	
travel mm	: 9.99
Tolerance mm	: + 0.25
Rated speed rpm	: 924
guide sleeve	
travel mm	: 6.77
Tolerance mm	: + 0.25
Rated speed rpm	: 390
guide sleeve	
travel mm	: 2.39
Tolerance mm	: + 0.25
Rated speed rpm	: 440
guide sleeve	
travel mm	: 3.01

Tolerance mm	: + 0.25
Rated speed rpm	: 550
guide sleeve	
travel mm	: 3.92
Tolerance mm	: + 0.25
Rated speed rpm	: 1650
guide sleeve	
travel mm	: 13.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1450
Rack travel in mm	: 11.00
Tolerance mm	: + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1 70
Aneroid pressure	
hPa	: 1000
Del. quantity	
cm ³ /1000 strokes	: 119.0
Tolerance	
cm ³ /1000 strokes	: + 1.0
Check tolerance	
cm ³ /1000S.	: + 3.0
Spread	
Tolerance	
cm ³ /1000 strokes	: 3.5
Check tolerance	
cm ³ /1000S.	: 6.0

RATED SPEED

control lever	
position degree	: 294.0
tolerance degree	: + 4.0
rack travel mm	: -1.00
Rated speed rpm	: 1305
Tolerance 1/min	: + 5
rack travel mm	: -10.10
Rated speed rpm	: 1465
Tolerance 1/min	: + 15
rack travel mm	: -13.60
Tolerance mm	: + 0.50
Rated speed rpm	: 1600

LOW IDLE

control lever
position degree : 244.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -8.10
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ -7.50

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : -0.80
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : -5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 350
rack travel mm : -1.60
Tolerance mm : \pm 0.40

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : -3.00
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 200
rack travel mm : -2.35
Tolerance mm : \pm 0.15

Pressure hPa : 300
rack travel mm : -1.75
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 200
Check
speed 1/min : $>$ 170
Rated speed rpm : $<$ 230
Check
speed 1/min : $<$ 245

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 117.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 7.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1305
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 275
rack travel mm : -8.10
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.02.95
Test oil : ISO 4113
Combination No. : 0403446318
Injection pump
Pump designation : PES6MW100/32ORS1214
: -1
EP type number : 0413406224
Governor
Governor design. : RQV275...1250MW115
: -1K
Governor no. : 0420083992
Cust. part No. :

Customer-spec. information
Customer : RVI
Motor : MIDR 060226 V
Power KW : 129.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413033

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

D08

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 2.00
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.15

Rack travel in mm : 13.15
Tolerance mm : ± 0.05
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm3/1000 strokes :	112.0
<hr/>	
Tolerance	
cm3/1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm3/1000S. :	+ 3.0
<hr/>	
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
<hr/>	
Check tolerance	
cm3/1000S. :	6.0
<hr/>	
2nd speed rpm	: 275
<hr/>	
Rack travel in mm :	-7.50
Tolerance mm :	+ 0.20
Del. quantity	
cm3/1000 strokes :	22.0
Tolerance	
cm3/1000 strokes :	+ 2.0
Check tolerance	
cm3/1000S. :	+ 4.5
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
Check tolerance	
cm3/1000S. :	5.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 275
guide sleeve	
travel mm	: 1.00
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1314
guide sleeve	
travel mm	: 9.71
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 912
guide sleeve	
travel mm	: 6.70
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 390
guide sleeve	
travel mm	: 2.39
Tolerance mm	: + 0.25

Rated speed rpm	: 440
guide sleeve	
travel mm	: 2.90
Tolerance mm	: + 0.25

Rated speed rpm	: 560
guide sleeve	
travel mm	: 4.01
Tolerance mm	: + 0.25

Rated speed rpm	: 1650
guide sleeve	
travel mm	: 13.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1450

Rack travel in mm :	11.00
Tolerance mm :	+ 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1250
Aneroid pressure	
hPa	: 1000
Del. quantity	
cm3/1000 strokes :	112.0
Tolerance	
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000S. :	+ 3.0
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
Check tolerance	
cm3/1000S. :	6.0

RATED SPEED

control lever	
position degree	: 292.0
tolerance degree	: + 4.0
<hr/>	
rack travel mm	: -1.00
Rated speed rpm	: 1300
Tolerance 1/min	: + 5
<hr/>	
rack travel mm	: -9.10
Rated speed rpm	: 1455
Tolerance 1/min	: + 15

rack travel mm : -12.60
Tolerance mm : \pm 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 242.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -7.50
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $<$ -6.90

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.15
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : -0.90
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : -4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 350
rack travel mm : -1.60
Tolerance mm : \pm 0.40

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : -1.90
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 120
rack travel mm : -1.40
Tolerance mm : \pm 0.15

Pressure hPa : 240
rack travel mm : -0.50
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 200
Check
speed 1/min : $>$ 170
Rated speed rpm : $<$ 230
Check
speed 1/min : $<$ 245

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 109.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 7.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1300
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 275
rack travel mm : -7.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.03.95
Test oil : ISO 4113

Combination No. : 0400866159

Injection pump
Pump designation : PES6A85D410/3RS2761
EP type number : 0410886895

Governor
Governor design. : RSV325...1400A2C2245
: L
Governor no. : 0420232537

Cust. part No. :

Customer-spec. information
Customer : KHD
Motor : BF6L913T
Power KW : 85.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- - 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 10.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 70.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
 cm³/1000S. : 7.0
 2nd speed rpm : 325
 Rack travel in mm : 8.00
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 16.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 5.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + 0.20
 governor spring
 pre-tension
 click setting x : 3.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 70.0
 Tolerance
 cm³/1000 strokes : + 0.5
 Check tolerance
 cm³/1000S. : + 2.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 7.0

RATED SPEED

control lever
 position degree : 99.0
 tolerance degree : + 4.0

rack travel mm : 9.45
 Rated speed rpm : 1245
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1280
 Tolerance 1/min : + 15

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1445

rack travel mm : 4.00
 Rated speed rpm : 1315

LOW IDLE

control lever
 position degree : 68.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
 rack travel mm : 7.50

Testing:

Rated speed rpm : 325
 rack travel mm : 8.00
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 490
 Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1200
 rack travel mm : 10.45
 Tolerance mm : + 0.05

Rated speed rpm : 500
 rack travel mm : 11.00
 Tolerance mm : + 0.05

Rated speed rpm : 800
 rack travel mm : 11.00

Tolerance mm : \pm 0.10
Rated speed rpm : 975
rack travel mm : 10.80
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 9.45
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.20
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 8.00

Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.03.95
Test oil : ISO 4113
Combination No. : 0401848828
Injection pump
Pump designation : PE8P120A520/4LS3850
EP type number : 0411828723

Governor
Governor design. : RQ300/900PA1230
Governor no. : 0421801792

Cust. part No. :

Customer-spec. information
Customer : DAEWOO
Motor : D2848LE

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0

D15

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 208.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

2nd speed rpm : 300

Rack travel in mm : 6.80
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 24.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.44
Tolerance mm : + 0.10

Rated speed rpm : 932
guide sleeve
travel mm : 6.37
Tolerance mm : + 0.10

Rated speed rpm : 880
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 433
guide sleeve
travel mm : 4.94
Tolerance mm : + 0.10

Rated speed rpm : 510
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 208.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

RATED SPEED

control lever
position degree : 31.0
tolerance degree : + 4.0

control lever
position degree : 93.0
tolerance degree : + 4.0

rack travel mm : 10.90
Rated speed rpm : 925
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 965
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + 4.0

control lever
position degree : 13.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.40
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 425
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 9.80

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 11.90
Tolerance mm : + 0.05

Rated speed rpm : 650
rack travel mm : 11.90
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 212.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 925
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.80
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.03.95
Test oil : ISO 4113

Combination No. : 0401849757

Injection pump
Pump designation : PE10P120A520/4LS3863
EP type number : 0411897711

Governor
Governor design. : RQ300/900PA1230
Governor no. : 0421801792

Cust. part No. :

Customer-spec. information
Customer : DAEWOO
Motor : D284OLE

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 10- 9- 4- 1- 8
: - 7- 6- 3- 5
: - 2

Phasing : 0-45-72-117-144
: -189-216-261-288
: -333
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 10

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 208.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

2nd speed rpm : 300

Rack travel in mm : 6.80
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 24.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.44
Tolerance mm : ± 0.10

Rated speed rpm : 932
guide sleeve
travel mm : 6.37
Tolerance mm : ± 0.10

Rated speed rpm : 880
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 433
guide sleeve
travel mm : 4.94
Tolerance mm : ± 0.10

Rated speed rpm : 510

guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 208.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

RATED SPEED

control lever
position degree : 31.0
tolerance degree : ± 4.0

control lever
position degree : 93.0
tolerance degree : ± 4.0

rack travel mm : 10.90
Rated speed rpm : 925
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 965
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

control lever
position degree : 13.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.40
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 425
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 9.80

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 11.90
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 11.90
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 220
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 212.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 925
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.80
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.04.95
Test oil : ISO 4113

Combination No. : 0400844099

Injection pump
Pump designation : PES4A95D410RS2837
EP type number : 0410894991

Governor
Governor design. : RQV300...1400AB1065
: -29L
Governor no. : 0420212247

Cust. part No. : 024 074 48 02

Customer-spec. information

Customer : MB-NFZ
Motor : OM 364
Power KW : 65.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 3.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- - 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 8.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 72.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

2nd speed rpm : 300

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.35
Tolerance mm : \pm 0.25

Rated speed rpm : 1453
guide sleeve
travel mm : 8.77
Tolerance mm : \pm 0.25

Rated speed rpm : 921
guide sleeve
travel mm : 5.42
Tolerance mm : \pm 0.25

Rated speed rpm : 367
guide sleeve
travel mm : 2.41
Tolerance mm : \pm 0.25

Rated speed rpm : 417
guide sleeve
travel mm : 3.01
Tolerance mm : \pm 0.25

Rated speed rpm : 490
guide sleeve
travel mm : 3.42
Tolerance mm : \pm 0.25

Rated speed rpm : 1740
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1450

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 72.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

RATED SPEED

control lever
position degree : 115.0
tolerance degree : \pm 4.0

rack travel mm : 7.85
Rated speed rpm : 1445
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1520
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 5.00

Testing:

Rated speed rpm : 100
CRT mm min. : > 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 8.85
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 8.90
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 52.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 7.85
Rated speed rpm : 1445
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

Note remarks

Edition : 03.04.95
Test oil : ISO 4113

Injection pump
Pump designation : PES6A95D410RS2797
EP type number : 0410896900

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366
Power KW : 92.0

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Inlet press. bar : 1.5

Opening pressure : 173.5 bar
Tolerance bar : \pm 1.5

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

Prestroke mm	:	3.25
Tolerance mm	:	+ 0.05

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 6- 2-
: 4

```

Phasing      : 0-60-120-180-240
              : -300
Tolerance    : +- 0.50
Check
tolerance °NW : +- 0.75

```

Rated speed rpm : 1200

Rack travel in mm : 9.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 59.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000s. : \pm 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 8.0
 2nd speed rpm : 300
 Rack travel in mm : 8.80
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 10.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1450
 Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 59.5
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

RATED SPEED

control lever
 position degree : 108.0
 tolerance degree : + 4.0

rack travel mm : 8.90
 Rated speed rpm : 1245
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1375
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 77.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 8.80
 Tolerance mm : + 0.20

Rated speed rpm : 100
 CRT mm min. : > 9.60

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 575

TORQUE CONTROL

Rated speed rpm : 1200
 rack travel mm : 9.95
 Tolerance mm : + 0.05

Rated speed rpm : 500
 rack travel mm : 10.80
 Tolerance mm : + 0.10

Rated speed rpm : 840
 rack travel mm : 10.35
 Tolerance mm : + 0.15

START CUT-OUT

Rated speed rpm : > 100
 Check
 speed 1/min : > 80
 Rated speed rpm : < 220

Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 45.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 8.90
Rated speed rpm : 1245
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.80
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 8.80
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.95
Test oil : ISO 4113
Combination No. : 0400874240
Injection pump
Pump designation : PES4A90D410RS2666
EP type number : 0410894029
Governor
Governor design. : RSV350...1400A0C2006
: -1L
Governor no. : 0420232449
Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM364
Power KW : 66.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1680750015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.30
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- - 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1380
Rack travel in mm : 10.45
Tolerance mm : ± 0.05
Del. quantity
cm3/1000 strokes : 63.5
Tolerance
cm3/1000 strokes : ± 0.5
Check tolerance
cm3/1000S. : ± 2.5
Spreed
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 7.0

2nd speed rpm : 350
Rack travel in mm : 7.90
Tolerance mm : + 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800
Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1380
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 63.5
Tolerance
cm³/1000 strokes : + 0.5
Check tolerance
cm³/1000S. : + 2.5
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 7.0

RATED SPEED

control lever
position degree : 109.0
tolerance degree : + 4.0
rack travel mm : 9.40
Rated speed rpm : 1435
Tolerance 1/min : + 5
rack travel mm : 4.00
Rated speed rpm : 1495
Tolerance 1/min : + 15

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1575

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 7.90
Tolerance mm : + 0.10
rack travel mm : 2.00
Rated speed rpm : 475
Tolerance 1/min : + 30

Rated speed rpm : 100
CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1380
rack travel mm : 10.45
Tolerance mm : + 0.05
Rated speed rpm : 500
rack travel mm : 11.75
Tolerance mm : + 0.05
Rated speed rpm : 900
rack travel mm : 11.20
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 53.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 9.40
Rated speed rpm : 1435
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 7.90
Tolerance mm : \pm 0.10

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.95
Test oil : ISO 4113
Combination No. : 0400876331
Injection pump
Pump designation : PES6A90D410RS2710
EP type number : 0410896082
Governor
Governor design. : RSV350...1400A0C2006
: -2L
Governor no. : 0420232453
Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366
Power KW : 100.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413000
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1680750015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.30
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- - 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1380
Rack travel in mm : 10.75
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 65.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
 cm³/1000S. : 7.0
 2nd speed rpm : 350
 Rack travel in mm : 8.10
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 8.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : + 0.35
 governor spring
 pre-tension
 click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1380
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 65.5
 Tolerance
 cm³/1000 strokes : + 0.5
 Check tolerance
 cm³/1000S. : + 2.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 7.0

RATED SPEED

control lever
 position degree : 111.0
 tolerance degree : + 4.0
 rack travel mm : 9.70
 Rated speed rpm : 1435
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1505
 Tolerance 1/min : + 15
 rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 1650

LOW IDLE

control lever
 position degree : 78.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
 rack travel mm : 8.10
 Tolerance mm : + 0.10
 rack travel mm : 2.00
 Rated speed rpm : 510
 Tolerance 1/min : + 30
 Rated speed rpm : 100
 CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1380
 rack travel mm : 10.75
 Tolerance mm : + 0.05
 Rated speed rpm : 500
 rack travel mm : 11.85
 Tolerance mm : + 0.05
 Rated speed rpm : 900
 rack travel mm : 11.40
 Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.5

BREAKAWAY

Rack travel in mm : 9.70
Rated speed rpm : 1435
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 8.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 8.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 7.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.04.95
Test oil : ISO 4113

Combination No. : 0400876406

Injection pump
Pump designation : PES6A95D410RS2835
EP type number : 0410896896

Governor
Governor design. : RSV400...1050A2C2263
 : -9L
Governor no. : 0420232616

Cust. part No. :

Customer-spec. information
Customer : FNH-GEOTECH
Motor : 7.5 L-8740 Trak
Power KW : 142.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Latching at 0.75 bar...0.85 bar.

Unlatching at 0.35 bar...0.45 bar.

Start-of-delivery blocking at start of delivery of cylinder no. 1.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.60
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 132.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

2nd speed rpm : 450

Rack travel in mm : 5.10
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 14.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

RATED SPEED

control lever
position degree : 96.0
tolerance degree : + 4.0

rack travel mm : 12.40

rack travel mm : 4.00

rack travel mm : 0.85

Tolerance mm : + 0.55

Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 70.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 450
rack travel mm : 5.10
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 620
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.45
Tolerance mm : + 0.05

Rated speed rpm : 650
rack travel mm : 15.10
Tolerance mm : + 0.10

Rated speed rpm : 900
rack travel mm : 14.20
Tolerance mm : + 0.20

Rated speed rpm : 1050
rack travel mm : 12.95
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 15.10
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.40
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 650
rack travel mm : 12.15
Tolerance mm : \pm 0.20

Pressure hPa : 900
rack travel mm : 14.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 12.40

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 195.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 450
rack travel mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.04.95
Test oil : ISO 4113

Combination No. : 0402046824

Injection pump
Pump designation : PES6P120A320RS3279
: -1
EP type number : 0412026758

Governor
Governor design. : RQ275/1050PA999-5
Governor no. : 0421801663

Cust. part No. : CCEP-5112B 66-175

Customer-spec. information

Customer : RVI
Motor : MIHR 062045 A/3
Power KW : 186.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750089

Outside diameter : 8.0

E08

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05

test only : ± 2.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav.
mm : 10.50
Tolerance mm : ± 0.50

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.25

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 160.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : -4.90
Tolerance mm : \pm 0.20

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.35
Tolerance mm : \pm 0.10

Rated speed rpm : 1126
guide sleeve
travel mm : 6.38
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 582
guide sleeve
travel mm : 5.14
Tolerance mm : \pm 0.10

Rated speed rpm : 710
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1380
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 750

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 274.0
tolerance degree : \pm 4.0

rack travel mm : -1.00
Rated speed rpm : 1138
Tolerance 1/min : \pm 8

rack travel mm : -7.20
Rated speed rpm : 1245
Tolerance 1/min : \pm 15

rack travel mm : -10.75
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 253.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -4.90
Tolerance mm : \pm 0.10

rack travel mm : -8.90
Rated speed rpm : 520
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm max. : < -3.40

TORQUE CONTROL

Rated speed rpm : 700

Rated speed rpm : 1050
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -1.20
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 220
rack travel mm : -0.45
Tolerance mm : + 0.15

Pressure hPa : 160
rack travel mm : -0.85
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 195
Check
speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050

Del. quantity
cm3/1000 strokes : 156.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 114.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1138
Tolerance 1/min : + 8

STARTING FUEL DELIVERY

Del. quantity
cm3/1000 strokes : 155.0
Tolerance
cm3/1000 strokes : + 10.0
Check tolerance
cm3/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 275
rack travel mm : -4.90
Tolerance mm : + 0.20

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.04.95
Test oil : ISO 4113
Combination No. : 0403244037
Injection pump
Pump designation : PES4MW100/720RS1519
: -2
EP type number : 0413204017
Governor
Governor design. : RQV300...1300MW132
: -6
Governor no. : 0420083309
Cust. part No. : 0240744002

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 1.00
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 13.90
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 8.0
 2nd speed rpm : 300
 Rack travel in mm : 3.90
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : + 0.25

Rated speed rpm : 1354
 guide sleeve
 travel mm : 7.77
 Tolerance mm : + 0.25

Rated speed rpm : 1140
 guide sleeve
 travel mm : 5.88
 Tolerance mm : + 0.25

Rated speed rpm : 629
 guide sleeve
 travel mm : 3.15
 Tolerance mm : + 0.25

Rated speed rpm : 679
 guide sleeve
 travel mm : 3.53
 Tolerance mm : + 0.25

Rated speed rpm : 800
 guide sleeve
 travel mm : 4.00
 Tolerance mm : + 0.25

Rated speed rpm : 1596
 guide sleeve
 travel mm : 12.00
 Tolerance mm : + 0.25

Rated speed rpm : 1690
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1450
 Rack travel in mm : 10.00
 Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 126.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

RATED SPEED

control lever
 position degree : 116.0
 tolerance degree : + 4.0

rack travel mm : 12.90
 Rated speed rpm : 1345
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1465
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 71.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.90
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 13.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.90
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 2.00
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 0.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 200

Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 124.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 9.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000s. : \pm 8.0

LOW IDLE

Rated speed rpm	:	300
rack travel mm	:	3.90
Tolerance mm	:	± 0.20
Del. quantity		
cm ³ /1000 strokes	:	12.0
Tolerance		
cm ³ /1000 strokes	:	± 2.0
Check tolerance		
cm ³ /1000S.	:	± 4.5
Speed		
Tolerance		
cm ³ /1000 strokes	:	2.0
Check tolerance		
cm ³ /1000S.	:	4.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.95
Test oil : ISO 4113

Combination No. : 0403244044

Injection pump
Pump designation : PES4MW100/320RS1521
EP type number : 0413204020

Governor
Governor design. : RQV400...1200MW147
Governor no. : 0420083320

Cust. part No. : 51.11103-7412

Customer-spec. information

Customer : SNF
Motor : D0824 LFL04
Power KW : 81.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 8.0

x inside diameter : 2.0

E15

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 135.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

2nd speed rpm : 400

Rack travel in mm : 4.90
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 400
guide sleeve
travel mm : 1.55
Tolerance mm : + 0.25

Rated speed rpm : 1253
guide sleeve
travel mm : 9.86
Tolerance mm : + 0.25

Rated speed rpm : 848
guide sleeve
travel mm : 5.69
Tolerance mm : + 0.25

Rated speed rpm : 448
guide sleeve
travel mm : 2.05
Tolerance mm : + 0.25

Rated speed rpm : 498
guide sleeve
travel mm : 2.59
Tolerance mm : + 0.25

Rated speed rpm : 550

guide sleeve
travel mm : 3.30
Tolerance mm : + 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1350

Rack travel in mm : 10.00
Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 800
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 125.0
tolerance degree : + 4.0

rack travel mm : 11.30
Rated speed rpm : 1253
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1325
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 79.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 400
rack travel mm : 4.90
Tolerance mm : \pm 0.10

Rated speed rpm : 300

CRT mm min. : $>$ 7.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.30
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 12.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 12.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.10
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : 11.80
Tolerance mm : \pm 0.10

Pressure hPa : 130
rack travel mm : 10.40
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 200
Check
speed 1/min : $>$ 180
Rated speed rpm : $<$ 300
Check
speed 1/min : $<$ 320

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 9.0

Aneroid pressure
hPa : 800
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 93.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

BREAKAWAY

Rack travel in mm : 11.30
Rated speed rpm : 1253
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 4.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.95
Test oil : ISO 4113
Combination No. : 0403244046
Injection pump
Pump designation : PES4MW100/720RS1525
EP type number : 0413204022
Governor
Governor design. : RQV300...1300MW132
: -13
Governor no. : 0420083330
Cust. part No. : 0260746202

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 1.00
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 13.90
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 8.0
 2nd speed rpm : 300
 Rack travel in mm : 3.90
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : + 0.25

Rated speed rpm : 1354
 guide sleeve
 travel mm : 7.15
 Tolerance mm : + 0.25

Rated speed rpm : 1130
 guide sleeve
 travel mm : 5.40
 Tolerance mm : + 0.25

Rated speed rpm : 610
 guide sleeve
 travel mm : 2.96
 Tolerance mm : + 0.25

Rated speed rpm : 660
 guide sleeve
 travel mm : 3.31
 Tolerance mm : + 0.25

Rated speed rpm : 780
 guide sleeve
 travel mm : 3.72
 Tolerance mm : + 0.25

Rated speed rpm : 1679
 guide sleeve
 travel mm : 12.00
 Tolerance mm : + 0.25

Rated speed rpm : 1780
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1390
 Rack travel in mm : 10.00
 Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 1400
 Del. quantity
 cm³/1000 strokes : 126.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

RATED SPEED

control lever
 position degree : 113.0
 tolerance degree : + 4.0

rack travel mm : 12.90
 Rated speed rpm : 1345
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1465
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.90
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 13.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400
rack travel mm : 13.90
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 2.00
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 0.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 200

Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 124.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 9.0

Aneroid pressure
hPa : 1400
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000s. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.95
Test oil : ISO 4113
Combination No. : 0403244047
Injection pump
Pump designation : PES4MW100/720RS1525
EP type number : 0413204022
Governor
Governor design. : RQV300...1300MW132
: -13
Governor no. : 0420083330
Cust. part No. : 0260746302

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 1.00
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 13.90
Tolerance mm : ± 0.05
Del. quantity
cm3/1000 strokes : 126.0
Tolerance
cm3/1000 strokes : ± 1.0
Check tolerance
cm3/1000S. : ± 4.0
Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
 cm3/1000S. : 8.0
 2nd speed rpm : 300
 Rack travel in mm : 3.90
 Tolerance mm : + 0.20
 Del. quantity
 cm3/1000 strokes : 12.0
 Tolerance
 cm3/1000 strokes : + 2.0
 Check tolerance
 cm3/1000S. : + 4.5
 Spreed
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : + 0.25
 Rated speed rpm : 1354
 guide sleeve
 travel mm : 7.15
 Tolerance mm : + 0.25
 Rated speed rpm : 1130
 guide sleeve
 travel mm : 5.40
 Tolerance mm : + 0.25
 Rated speed rpm : 610
 guide sleeve
 travel mm : 2.96
 Tolerance mm : + 0.25
 Rated speed rpm : 660
 guide sleeve
 travel mm : 3.31
 Tolerance mm : + 0.25
 Rated speed rpm : 780
 guide sleeve
 travel mm : 3.72
 Tolerance mm : + 0.25
 Rated speed rpm : 1679
 guide sleeve
 travel mm : 12.00
 Tolerance mm : + 0.25

Rated speed rpm : 1780
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1390
 Rack travel in mm : 10.00
 Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm3/1000 strokes : 126.0
 Tolerance
 cm3/1000 strokes : + 1.0
 Check tolerance
 cm3/1000S. : + 4.0
 Spreed
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 8.0

RATED SPEED

control lever
 position degree : 113.0
 tolerance degree : + 4.0
 rack travel mm : 12.90
 Rated speed rpm : 1345
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1465
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.90
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 13.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.90
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 2.00
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 0.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 200

Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 124.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 9.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000s. : \pm 8.0

LOW IDLE

Rated speed rpm	:	300
rack travel mm	:	3.90
Tolerance mm	:	+ 0.20
Del. quantity		
cm ³ /1000 strokes	:	12.0
Tolerance		
cm ³ /1000 strokes	:	+ 2.0
Check tolerance		
cm ³ /1000S.	:	+ 4.5
Speed		
Tolerance		
cm ³ /1000 strokes	:	2.0
Check tolerance		
cm ³ /1000S.	:	4.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.03.95
Test oil : ISO 4113

Combination No. : 0403276005

Injection pump
Pump designation : PES6MW100/720RS1517
: -3
EP type number : 0413206020

Governor
Governor design. : RSV350...1200MWOA355
Governor no. : 0420085228

Cust. part No. : 0250740102

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 100.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 2.10

Rack travel in mm : 21.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 100.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

2nd speed rpm : 350

Rack travel in mm : 3.00
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 100.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

RATED SPEED

control lever
position degree : 100.0
tolerance degree : ± 4.0

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1315

rack travel mm : 10.15
Rated speed rpm : 1245
Tolerance 1/min : ± 5

LOW IDLE

control lever
position degree : 66.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 3.00
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 11.15
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 11.15
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 11.15
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 380
rack travel mm : 0.65
Tolerance mm : \pm 0.10

Pressure hPa : 300
rack travel mm : 0.30
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 92.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 73.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 5.0

Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 3.00
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.11.92
Test oil : ISO 4113
Combination No. : 0403444142
Injection pump
Pump designation : PES4MW100/720RS1212
EP type number : 0413404114

Governor
Governor design. : RQV300...1300MW50
: -15
Governor no. : 0420083238

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 102.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 7.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.25
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 102.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Speed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rack travel in mm : 6.50
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.40
Tolerance mm : + 0.25

Rated speed rpm : 1355
guide sleeve
travel mm : 8.65
Tolerance mm : + 0.25

Rated speed rpm : 885
guide sleeve
travel mm : 5.01
Tolerance mm : + 0.25

Rated speed rpm : 355
guide sleeve
travel mm : 1.96
Tolerance mm : + 0.25

Rated speed rpm : 405
guide sleeve
travel mm : 2.33
Tolerance mm : + 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 2.92
Tolerance mm : + 0.25

Rated speed rpm : 1610
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1340

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 700
Del. quantity
cm³/1000 strokes : 102.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

RATED SPEED

control lever
position degree : 111.0
tolerance degree : + 4.0

rack travel mm : 12.20
Rated speed rpm : 1345
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1460
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 76.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.50
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 8.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 435

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.25
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.25
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 13.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : 12.70
Tolerance mm : \pm 0.10

Pressure hPa : 200
rack travel mm : 11.00
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 200

Check
speed 1/min : $<$ 230

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 87.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.20
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000s. : \pm 8.0

LOW IDLE

rack travel mm : 6.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.04.95
Test oil : ISO 4113

Combination No. : 0403474008

Injection pump
Pump designation : PES4MW100/720RS1181
EP type number : 0413404107

Governor
Governor design. : RSV400...1000MW1A333
Governor no. : 0420085118

Cust. part No. :

Customer-spec. information
Customer : LIEBHERR
Motor : 914 TI
Power KW : 120.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413049

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 152.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

2nd speed rpm : 400

Rack travel in mm : 6.20
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 22.0
Tolerance

cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 3.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 100.0
tolerance degree : + 4.0

rack travel mm : 11.10
Rated speed rpm : 1025
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1065
Tolerance 1/min : + 15

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1175

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 6.20

Testing:

Rated speed rpm : 400
rack travel mm : 5.70
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 510
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 12.15
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 12.15
Tolerance mm : + 0.05

Check tolerance : 5.5
cm3/1000S.

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 154.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 5.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 9.0

BREAKAWAY

Rack travel in mm : 11.10
Rated speed rpm : 1025
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm3/1000 strokes : 135.0
Tolerance
cm3/1000 strokes : \pm 5.0
Check tolerance
cm3/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 6.20
Tolerance mm : \pm 0.20
Del. quantity
cm3/1000 strokes : 22.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 4.5
Spreed
Tolerance
cm3/1000 strokes : 3.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.07.93
Test oil : ISO 4113

Combination No. : 0403474021

Injection pump
Pump designation : PES4MW100/720RS1181
EP type number : 0413404107

Governor
Governor design. : RSV400...1000MW1A348
Governor no. : 0420085183

Cust. part No. :

Customer-spec. information
Customer : LIEBHERR
Motor : D914TI
Power KW : 125.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413049

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

F09

x length mm : 600

REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05

test only : ± 2.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 157.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 157.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Spreed
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 7.5

RATED SPEED

control lever
position degree : 96.0
tolerance degree : + 4.0
rack travel mm : 10.90

F10

Rated speed rpm : 930
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 988
Tolerance 1/min : + 8

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1100

rack travel mm : 4.00
Rated speed rpm : 1005

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 6.25

Testing:

Rated speed rpm : 400
rack travel mm : 5.25
Tolerance mm : + 0.25

rack travel mm : 2.00
Rated speed rpm : 480
Tolerance 1/min : + 30

Rated speed rpm : 100
CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 11.95
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 11.95
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 11.95
Tolerance mm : + 0.05

Rated speed rpm : 400
rack travel mm : 13.35
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1100
rack travel mm : 11.95
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 550
rack travel mm : 10.65
Tolerance mm : \pm 0.05

Rated speed rpm : 550

Pressure hPa : 530
rack travel mm : 10.85
Tolerance mm : \pm 0.05

Pressure hPa : 670
rack travel mm : 11.55
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 148.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 160.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 134.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 930
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.04.95
Test oil : ISO 4113

Combination No. : 0403474021C

Injection pump
Pump designation : PES4MW100/720RS1181
EP type number : 0413404107

Governor
Governor design. : RSV400...1000MW1A348
Governor no. : 0420085183

Cust. part No. :

Customer-spec. information
Customer : LIEBHERR
Motor : D914TI
Power KW : 125.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413049

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

F12

x length mm : 600

REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05

test only : ± 1.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 157.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

2nd speed rpm : 500

Rack travel in mm : 6.25
Tolerance mm : + 0.25

Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 96.0
tolerance degree : + 4.0

rack travel mm : 10.90
Rated speed rpm : 930
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 988
Tolerance 1/min : + 8

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1000

rack travel mm : 4.00
Rated speed rpm : 1005

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 6.25

Testing:

Rated speed rpm : 500
rack travel mm : 5.25
Tolerance mm : + 0.25

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 11.95
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 400
rack travel mm : 13.35
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1100
rack travel mm : 11.95
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 550
rack travel mm : 10.65
Tolerance mm : \pm 0.05

Rated speed rpm : 550

Pressure hPa : 530
rack travel mm : 10.85
Tolerance mm : \pm 0.05

Pressure hPa : 670
rack travel mm : 11.55
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 148.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 160.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 134.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 700
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 500
rack travel mm : 6.25
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.03.95
Test oil : ISO 4113

Combination No. : 0403474022

Injection pump
Pump designation : PES4MW100/720RS1151
EP type number : 0413404104

Governor
Governor design. : RSV350...1300MWOA329
 : -12
Governor no. : 0420085189

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM364A
Power KW : 79.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Test hydr. locking device for starting
with 500...1000 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1280

Rack travel in mm : 10.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 81.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

2nd speed rpm : 350

Rack travel in mm : > 6.40

Tolerance mm : + 0.40

Del. quantity
cm3/1000 strokes : 12.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1280
Aneroid pressure
hPa : 700
Del. quantity
cm3/1000 strokes : 81.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 3.0
Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

RATED SPEED

control lever
position degree : 111.0
tolerance degree : + 4.0

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1550

LOW IDLE

Testing:

Rated speed rpm : 350
rack travel mm : 6.40
Tolerance mm : + 0.40

rack travel mm : 2.00

Rated speed rpm : 170

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1280
rack travel mm : 10.95
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 11.85
Tolerance mm : + 0.10

Rated speed rpm : 1000
rack travel mm : 11.80
Tolerance mm : + 0.10

Rated speed rpm : 1175
rack travel mm : 11.15
Tolerance mm : + 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.85
Tolerance mm : + 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.90
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 300
rack travel mm : 11.30
Tolerance mm : \pm 0.15

Pressure hPa : 200
rack travel mm : 10.80
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : $>$ 6.40
Tolerance mm : \pm 0.40
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

Note remarks

Edition : 08.02.95
Test oil : ISO 4113

Injection pump
Pump designation : PES6MW100/720RS1196
: -1
EP type number : 0413406219

Governor
Governor design. : RSV400...1000MW1A333
Governor no. : 0420085118

Cust. part No. : 927 7706

Customer : LIEBHERR
Motor : D 916 T
Power KW : 132.0

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Inlet press. bar : 1.5

Opening pressure : 173.5
Tolerance bar : ± 1.5

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

Test pressure bar : 31.0
Tolerance bar : \pm 1.0

```
Prestroke mm      :      3.45
Tolerance mm      : + 0.05
```

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

```
Phasing      : 0-60-120-180-240
              : -300
Tolerance    : + 0.50
Check
tolerance °NW : + 0.75
```

Rated speed rpm : 900

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 119.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : + 3.0

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

2nd speed rpm : 400

Rack travel in mm : 5.60
Tolerance mm : + 0.20

Del. quantity
cm3/1000 strokes : 20.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 119.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 3.0
Spread

Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 6.0

RATED SPEED

control lever
position degree : 98.0
tolerance degree : + 4.0

rack travel mm : 10.25
Rated speed rpm : 945
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 995
Tolerance 1/min : + 10

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1080

rack travel mm : 4.00
Rated speed rpm : 175

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.60

Testing:

Rated speed rpm : 400
rack travel mm : 5.60
Tolerance mm : + 0.20

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 11.25
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 11.30
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 112.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

BREAKAWAY

Rack travel in mm : 10.25
Rated speed rpm : 945
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 5.60
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.03.95
Test oil : ISO 4113
Combination No. : 0402736846
Injection pump
Pump designation : PES6P120A120RS7287
EP type number : 0412726896
Governor
Governor design. : RQV400...1250PA1081K
Governor no. : 0421815360

Cust. part No. : 3924903

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power KW : 156.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413086

Inlet press. bar : 2.0

Test nozzle holder assembly : 1688901103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0

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x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 3.60
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 177.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1410

Rack travel in mm : 13.00
Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : + 6.0

rack travel mm : 12.90
Rated speed rpm : 1320
Tolerance 1/min : + 15

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : + 5

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 6.0

Testing:

Rated speed rpm : 420
rack travel mm : 5.60
Tolerance mm : + 0.20

Rated speed rpm : 300
CRT mm min. : > 8.90

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 420

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.95
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 12.00
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : + 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 13.95
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 9.80
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 585
rack travel mm : 12.90
Tolerance mm : \pm 0.30

Pressure hPa : 305
rack travel mm : 10.95
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 315
Check
speed 1/min : < 325

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 1320
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.03.95
Test oil : ISO 4113
Combination No. : 0402736848
Injection pump
Pump designation : PES6P120A120RS7314
EP type number : 0412726901

Governor
Governor design. : RQV400...1250PA964
: -23K
Governor no. : 0421815374

Cust. part No. : 3921922

Customer spec. information
Customer : CDC
Motor : 6BTA-A
Power KW : 142.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413086

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1688901103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 3.60
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 169.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 169.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 118.0
tolerance degree : + 6.0

rack travel mm : 13.00
Rated speed rpm : 1310
Tolerance 1/min : + 15

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : + 5

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 6.0

Testing:

Rated speed rpm : 420
rack travel mm : 5.80
Tolerance mm : + 0.20

Rated speed rpm : 300

CRT mm min. : > 8.90

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 420

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.35
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 12.90
Tolerance mm : + 0.20

Rated speed rpm : 1250
rack travel mm : 14.10
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1200
rack travel mm : 14.35
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 500
rack travel mm : 13.30
Tolerance mm : + 0.30

Pressure hPa : 375
rack travel mm : 12.20
Tolerance mm : + 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 315
Check
speed 1/min : < 325

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 112.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 1310
Tolerance 1/min : ± 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.00
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000s. : ± 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.03.95
Test oil : ISO 4113

Combination No. : 0402736866

Injection pump
Pump designation : PES6P120A120RS7349
EP type number : 0412726920

Governor
Governor design. : RQV400...1250PA1171K
Governor no. : 0421815437

Cust. part No. : 3928149

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power KW : 156.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413086

Inlet press. bar : 2.0

Test nozzle holder assembly : 1688901103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0

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x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 3.60
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 177.0

Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 4.0
Spread	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1410
Rack travel in mm	: 13.00
Tolerance mm	: ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1250
Aneroid pressure	
hPa	: 1200
Del. quantity	
cm ³ /1000 strokes	: 177.0
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 4.0
Spread	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

RATED SPEED

control lever	
position degree	: 120.0
tolerance degree	: ± 6.0
rack travel mm	: 12.90
Rated speed rpm	: 1320
Tolerance 1/min	: ± 15

rack travel mm	: 4.00
Rated speed rpm	: 1475
Tolerance 1/min	: ± 5
rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 1550

LOW IDLE

control lever	
position degree	: 72.0
tolerance degree	: ± 6.0

Testing:

Rated speed rpm	: 420
rack travel mm	: 5.60
Tolerance mm	: ± 0.20
Rated speed rpm	: 300
CRT mm min.	: > 8.90

CONTINUOUS-ACTION CONTROL

Rated speed rpm	: 420
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TORQUE CONTROL

Rated speed rpm	: 1250
rack travel mm	: 13.95
Tolerance mm	: ± 0.05
Rated speed rpm	: 800
rack travel mm	: 12.00
Tolerance mm	: ± 0.10
Rated speed rpm	: 500
rack travel mm	: 10.90
Tolerance mm	: ± 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	: 1250
Pressure hPa	: 1200
rack travel mm	: 13.95
Tolerance mm	: ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 9.80
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 585
rack travel mm : 12.90
Tolerance mm : \pm 0.30

Pressure hPa : 305
rack travel mm : 10.95
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 315
Check
speed 1/min : < 325

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 1320
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.03.95
Test oil : ISO 4113
Combination No. : 0402736867
Injection pump
Pump designation : PES6P120A12ORS7350
EP type number : 0412726921
Governor
Governor design. : RQV400...1150PA1172K
Governor no. : 0421815438

Cust. part No. : 3928147

Customer-spec. information

Customer : CDC
Motor : 6BTA-A
Power KW : 142.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413086

Inlet press. bar : 2.0

Test nozzle holde
assembly : 1688901103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 3.60
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 167.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 167.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 118.0
tolerance degree : + 6.0

rack travel mm : 13.00
Rated speed rpm : 1310
Tolerance 1/min : + 15

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : + 5

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 6.0

Testing:

Rated speed rpm : 420
rack travel mm : 6.50
Tolerance mm : + 0.20

Rated speed rpm : 300

CRT mm min. : > 8.90

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 420

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.35
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 12.90
Tolerance mm : + 0.20

Rated speed rpm : 1250
rack travel mm : 14.20
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1200
rack travel mm : 14.35
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 1150
Pressure hPa : 500
rack travel mm : 13.40
Tolerance mm : + 0.30

Pressure hPa : 375
rack travel mm : 12.30
Tolerance mm : + 0.20

START CUT-OUT

Rated speed rpm : > 100

Check
speed 1/min : > 80
Rated speed rpm : < 315
Check
speed 1/min : < 325

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 110.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 1310
Tolerance 1/min : ± 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.00
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.04.93
Test oil : ISO 4113
Combination No. : 0400866198
Injection pump
Pump designation : PES6A100D320/3RS2763
EP type number : 0410806006

Governor
Governor design. : RSV400...950AOC2238
:-4R
Governor no. : 0420233331

Cust. part No. :

Customer-spec. information
Customer : CDC
Motor : 6 CT 8.3
Power KW : 145.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

Start-of-delivery mark at 10° cam
rotation angle after start of delivery,
cylinder 1

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
:-300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 121.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.5

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

2nd speed rpm : 400

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 15.0

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 121.5
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.5
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

RATED SPEED

control lever
position degree : 93.0
tolerance degree : \pm 4.0

rack travel mm : 11.10
Rated speed rpm : 995
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1070
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1150

rack travel mm : 4.00
Rated speed rpm : 1085

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.60

Testing:

Rated speed rpm : 400
rack travel mm : 5.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 470
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : > 19.00

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.70
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 305
rack travel mm : 11.80
Tolerance mm : \pm 0.20

Pressure hPa : 220
rack travel mm : 11.15
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 91.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

BREAKAWAY

Rack travel in mm : 11.10
Rated speed rpm : 995
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.04.93
Test oil : ISO 4113

Combination No. : 0400075933

Injection pump
Pump designation : PES5M55C320RS168
EP type number : 0410055978

Governor
Governor design. : RSF350/1900M69-7
Governor no. : 0420021151

Cust. part No. : T8

Customer-spec. information

Customer : MB-NFZ
Motor : OM602-D29 A,S,CH
Power KW : 70.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

*NW after s.o.d. : 15.5
Tolerance : ± 0.20
Check
tolerance *NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 39.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Spreed

Tolerance

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000S. : 3.0

Rack travel in mm : 4.30

Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure

ALDA / ADA hPa : 1100

Del. quantity

cm3/1000 strokes : 39.5

Tolerance

cm3/1000 strokes : ± 0.5

Check tolerance

cm3/1000S. : ± 1.5

Spreed

Tolerance

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000S. : 3.0

RATED SPEED

control lever

position degree : 50.0

rack travel mm : 7.40

Rated speed rpm : 2100

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 2500

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever

position degree : 14.0

tolerance degree : ± 2.0

Setting point w/out bumper spring

Rated speed rpm : 380

rack travel mm : 4.30

SET IDLE AUXILIARY SPRING

Rated speed rpm : 350

rack travel mm : 5.30

Tolerance mm : ± 0.10

rack travel mm : 3.00

Rated speed rpm : 520

Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 250

CRT mm min. : > 9.20

Rated speed rpm : 1000

CRT mm max. : 1.45

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 12.55

Tolerance mm : ± 0.05

Rated speed rpm : 1400

rack travel mm : 12.25

Tolerance mm : ± 0.15

Rated speed rpm : 1900

rack travel mm : 11.85

Tolerance mm : ± 0.15

ADJUST NEGATIVE TORQUE CONTROLL

Rated speed rpm : 500

rack travel mm : 12.30

Tolerance mm : ± 0.10

Rated speed rpm : 800

rack travel mm : 12.40

Tolerance mm : ± 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
 Ref. pressure
 ALDA / ADA hPa : 950
 rack travel mm : 0.10
 Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1000
 Ref. pressure
 ALDA / ADA hPa : 900
 rack travel mm : 0.60
 Tolerance mm : ± 0.10

Rated speed rpm : 1000
 Ref. pressure
 ALDA / ADA hPa : 750
 rack travel mm : 2.00
 Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 1400
 Del. quantity
 cm³/1000 strokes : 39.3
 Tolerance
 cm³/1000 strokes : ± 0.8
 Check tolerance
 cm³/1000S. : ± 1.8
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 1900
 Spreed
 Del. quantity
 cm³/1000 strokes : 40.5
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

ADJUST NEGATIVE TORQUE CONTROLL

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 36.3
 Tolerance
 cm³/1000 strokes : ± 0.8
 Check tolerance
 cm³/1000S. : ± 1.8
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 800
 Del. quantity
 cm³/1000 strokes : 38.3
 Tolerance
 cm³/1000 strokes : ± 0.8
 Check tolerance
 cm³/1000S. : ± 1.8
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

HIGH IDLE

Ref. pressure
 ALDA / ADA hPa : 1100

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.10
 Del. quantity
 cm³/1000 strokes : 52.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 6.0

SETTING PNEUMATIC FAST IDLE (ELA) (PLA) POSITION

control lever
position degree : VWL
Rated speed rpm : 400

Rack travel in mm : 6.00
Tolerance mm : \pm 0.80
Del. quantity
cm³/1000 strokes : 10.5
Tolerance
cm³/1000 strokes : \pm 4.0
Vacuum hPa : 400

SETTING/TESTING ELECTRONIC IDLE
REGULATION (ELR)

control lever
position degree : 14.0
tolerance degree : \pm 2.0

control lever
position degree : 50.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.04.93
Test oil : ISO 4113

Combination No. : 0400075943

Injection pump
Pump designation : PES5M55C320RS168
EP type number : 0410055978

Governor
Governor design. : RSF350/1700M69-5
Governor no. : 0420021147

Cust. part No. : T8

Customer-spec. information

Customer : MB-NFZ
Motor : OM602-2.9l
Power KW : 62.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

G13

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 15.5
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 37.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000s. : ± 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

Rack travel in mm : 5.60

Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure

ALDA / ADA hPa : 1100

Del. quantity

cm³/1000 strokes : 37.5

Tolerance

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000S. : ± 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

RATED SPEED

control lever

position degree : 50.0

rack travel mm : 9.25

Rated speed rpm : 1800

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 2300

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever

position degree : 14.0

tolerance degree : ± 2.0

Setting point w/out bumper spring

Rated speed rpm : 350

rack travel mm : 5.60

SET IDLE AUXILIARY SPRING

Rated speed rpm : 380

rack travel mm : 4.50

Tolerance mm : ± 0.10

rack travel mm : 3.00

Rated speed rpm : 570

Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 250

CRT mm min. : > 9.20

Rated speed rpm : 1000

CRT mm max. : 1.45

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 12.35

Tolerance mm : ± 0.05

Rated speed rpm : 1400

rack travel mm : 11.75

Tolerance mm : ± 0.15

Rated speed rpm : 1650

rack travel mm : 11.55

Tolerance mm : ± 0.15

ADJUST NEGATIVE TORQUE CONTROLL

Rated speed rpm : 500

rack travel mm : 12.10

Tolerance mm : ± 0.10

Rated speed rpm : 800

rack travel mm : 12.25

Tolerance mm : ± 0.15

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
 Ref. pressure
 ALDA / ADA hPa : 950
 rack travel mm : 0.10
 Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1000
 Ref. pressure
 ALDA / ADA hPa : 900
 rack travel mm : 0.60
 Tolerance mm : ± 0.10

Rated speed rpm : 1000
 Ref. pressure
 ALDA / ADA hPa : 750
 rack travel mm : 2.00
 Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 1400
 Del. quantity
 cm³/1000 strokes : 37.3
 Tolerance
 cm³/1000 strokes : ± 0.8
 Check tolerance
 cm³/1000S. : ± 1.8
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 1650
 Spreed
 Del. quantity
 cm³/1000 strokes : 38.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

ADJUST NEGATIVE TORQUE CONTROLL

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 34.3
 Tolerance
 cm³/1000 strokes : ± 0.8
 Check tolerance
 cm³/1000S. : ± 1.8
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 800
 Del. quantity
 cm³/1000 strokes : 36.3
 Tolerance
 cm³/1000 strokes : ± 0.8
 Check tolerance
 cm³/1000S. : ± 1.8
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

HIGH IDLE

Ref. pressure
 ALDA / ADA hPa : 1100

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.10
 Del. quantity
 cm³/1000 strokes : 52.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 6.0

SETTING PNEUMATIC FAST IDLE (ELA) (PLA) POSITION

control lever
position degree : VWL
Rated speed rpm : 400

Rack travel in mm : 6.40
Tolerance mm : \pm 0.80
Del. quantity
cm³/1000 strokes : 10.5
Tolerance
cm³/1000 strokes : \pm 4.0
Vacuum hPa : 400.0

SETTING/TESTING ELECTRONIC IDLE
REGULATION (ELR)

control lever
position degree : 14.0
tolerance degree : \pm 2.0

control lever
position degree : 50.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.02.93
Test oil : ISO 4113

Combination No. : 0400075947

Injection pump
Pump designation : PES5M55C320RS168
EP type number : 0410055978

Governor
Governor design. : RSF340/1900M70-5
Governor no. : 0420021124

Cust. part No. : T8

Customer-spec. information
Customer : MB-NFZ
Motor : OM602-2.9L
Power KW : 70.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 15.5
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 39.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

Rack travel in mm : 4.10
Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 1100
Del. quantity
cm³/1000 strokes : 39.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 1.5
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

rack travel mm : 7.25
Rated speed rpm : 2100

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 2500

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever
position degree : 14.0
tolerance degree : ± 2.0

Setting point w/out bumper spring
Rated speed rpm : 380
rack travel mm : 4.10

SET IDLE AUXILIARY SPRING

Rated speed rpm : 315
rack travel mm : 5.40
Tolerance mm : ± 0.10

rack travel mm : 2.50
Rated speed rpm : 550
Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 250

CRT mm min. : > 7.00

Rated speed rpm : 1000

CRT mm max. : 1.45

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.55
Tolerance mm : ± 0.05

Rated speed rpm : 1400
rack travel mm : 12.25
Tolerance mm : ± 0.15

Rated speed rpm : 1900
rack travel mm : 11.75
Tolerance mm : ± 0.15

ADJUST NEGATIVE TORQUE CONTROLL

Rated speed rpm : 500
rack travel mm : 12.30
Tolerance mm : ± 0.10

Rated speed rpm : 800
rack travel mm : 12.40
Tolerance mm : ± 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
 Ref. pressure
 ALDA / ADA hPa : 950
 rack travel mm : 0.10
 Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1000
 Ref. pressure
 ALDA / ADA hPa : 900
 rack travel mm : 0.60
 Tolerance mm : ± 0.10

Rated speed rpm : 1000
 Ref. pressure
 ALDA / ADA hPa : 750
 rack travel mm : 2.00
 Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 1400
 Del. quantity
 cm³/1000 strokes : 39.3
 Tolerance
 cm³/1000 strokes : ± 0.8
 Check tolerance
 cm³/1000S. : ± 1.8
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 1900
 Spreed
 Del. quantity
 cm³/1000 strokes : 41.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

ADJUST NEGATIVE TORQUE CONTROLL

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 36.3
 Tolerance
 cm³/1000 strokes : ± 0.8
 Check tolerance
 cm³/1000S. : ± 1.8
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 800
 Del. quantity
 cm³/1000 strokes : 38.3
 Tolerance
 cm³/1000 strokes : ± 0.8
 Check tolerance
 cm³/1000S. : ± 1.8
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

HIGH IDLE

Ref. pressure
 ALDA / ADA hPa : 1100

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.10
 Del. quantity
 cm³/1000 strokes : 52.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 6.0

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 14.0
tolerance degree : \pm 2.0
Rated speed rpm : 340

Rack travel in mm : 12.30
Tolerance mm : \pm 0.70
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : \pm 4.0

Current A : 1.80

control lever
position degree : 50.0
Rated speed rpm : 2500

Rack travel in mm : 0.50
Tolerance mm : \pm 0.50

Current short-
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

Adjustment of the control-rod travel sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.07.93
Test oil : ISO 4113
Combination No. : 0400866190
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number :
Governor
Governor design. : RSV400...1250A0C2216
:-5R
Governor no. : 0420233327

Cust. part No. :

Customer-spec. information
Customer : CDC
Motor : 6 CT 8.3
Power KW : 160.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901017

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
:-300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

*NW after s.o.d. : 10.0
S.o.d. blocking
Barrel no. : 1

*NW after s.o.d. : 11.0

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.05

Tolerance mm	: + 0.05
<hr/>	
Del. quantity cm ³ /1000 strokes	: 122.0
<hr/>	
Tolerance cm ³ /1000 strokes	: + 1.0
<hr/>	
Check tolerance cm ³ /1000S.	: + 3.5
<hr/>	
Spreed Tolerance cm ³ /1000 strokes	: 4.0
<hr/>	
Check tolerance cm ³ /1000S.	: 6.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
<hr/>	
Rack travel in mm	: 0.50
Tolerance mm	: + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1250
Aneroid pressure hPa	: -
Del. quantity cm ³ /1000 strokes	: 122.0
Tolerance cm ³ /1000 strokes	: + 1.0
Check tolerance cm ³ /1000S.	: + 3.5
Spreed Tolerance cm ³ /1000 strokes	: 4.0
Check tolerance cm ³ /1000S.	: 6.5

RATED SPEED

control lever position degree	: 106.0
tolerance degree	: + 4.0

rack travel mm	: 11.00
Rated speed rpm	: 1295
Tolerance 1/min	: + 5

rack travel mm	: 4.00
Rated speed rpm	: 1370
Tolerance 1/min	: + 15

rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1450

rack travel mm	: 4.00
Rated speed rpm	: 1375

LOW IDLE

control lever position degree	: 80.0
tolerance degree	: + 4.0

Setting point w/out bumper spring

Rated speed rpm	: 400
rack travel mm	: 5.00

Testing:

Rated speed rpm	: 400
rack travel mm	: 5.50
Tolerance mm	: + 0.10

rack travel mm	: 2.00
Tolerance 1/min	: + 30

Rated speed rpm	: 100
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CRT mm min.	: > 19.50
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TORQUE CONTROL

Rated speed rpm	: 1250
rack travel mm	: 12.05
Tolerance mm	: + 0.05

Rated speed rpm	: 750
rack travel mm	: 12.60
Tolerance mm	: + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	: -
Rated speed rpm	: 750

Del. quantity
cm³/1000 strokes : 124.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1295
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000s. : ± 13.0

Note remarks

Edition : 28.06.93
Test oil : ISO 4113

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number :

Governor
Governor design. : RSV400...1100A0C219D
: -80R
Governor no. : 0420233319

```
Customer-spec. information
Customer      : CDC
Motor         : 6 CT 8.3
Power KW      : 156.6
```

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Test nozzle holde
assembly : 1688901017

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

Test pressure bar : 28.0
Tolerance bar : \pm 1.0

Prestroke mm	:	2.85
Tolerance mm	:	+ 0.05

test only : + 2.10

Rack travel in mm : 10.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check
tolerance °NW : + 0.75

Time to cyl. no. : 1

°NW after s.o.d. : 10.0

S.o.d. blocking

Barrel no. : 1

°NW after s.o.d. : 10.0

Rated speed rpm : 1100

Rack travel in mm : 12.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 123.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.5

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 123.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.5
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

RATED SPEED

control lever
position degree : 90.0

tolerance degree : + 4.0

rack travel mm : 11.30
Rated speed rpm : 1145
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1210

LOW IDLE

control lever
position degree : 70.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.90

Testing:

Rated speed rpm : 400
rack travel mm : 5.40
Tolerance mm : + 0.10

rack travel mm : 2.00
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.35
Tolerance mm : + 0.05

BREAKAWAY

Rack travel in mm : 11.30
Rated speed rpm : 1145
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 13.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.08.93
Test oil : ISO 4113

Combination No. : 0400674048

Injection pump
Pump designation : PE4A95D420RS2662-1
EP type number : 0410694994

Governor
Governor design. : RSV350...1100A8C2222
: -2R
Governor no. : 0420233339

Cust. part No. : 44 004 065 M91

Customer-spec. information
Customer : HANOMAG
Motor : D944T
Power KW : 97.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : DAUERENTL.

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750003

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.20
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 1.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 4- 3

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 130.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

2nd speed rpm : 350

Rack travel in mm : 6.30
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Del. quantity

cm³/1000 strokes : 130.0
Tolerance

cm³/1000 strokes : + 1.0
Check tolerance

cm³/1000S. : + 3.0
Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

RATED SPEED

control lever
position degree : 100.0
tolerance degree : + 4.0

rack travel mm : 11.80
Rated speed rpm : 1145
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1220

LOW IDLE

control lever
position degree : 68.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 5.80

Testing:

Rated speed rpm : 350
rack travel mm : 6.30
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.80
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 13.30

Tolerance mm : \pm 0.05
Rated speed rpm : 900
rack travel mm : 13.00
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 131.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.80
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 6.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.06.93
Test oil : ISO 4113

Combination No. : 0400075015

Injection pump
Pump designation : PES5M55C320RS176
EP type number : 0410055975

Governor
Governor design. : RSV400...1700MOC355
-1
Governor no. : 0420033067

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM602 D 29
Power KW : 62.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test Lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288
Check
tolerance °NW : ± 1.00

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 15.5
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1700

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 38.5

Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : + 1.5

Spread

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1700
Del. quantity
cm³/1000 strokes : 38.5
Tolerance
cm³/1000 strokes : + 0.5
Check tolerance
cm³/1000S. : + 1.5
Spread
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 87.0
rack travel mm : 11.20
Tolerance 1/min : + 5
Rated speed rpm : 1745
rack travel mm : 4.00
Rated speed rpm : 1830
Tolerance 1/min : + 10
rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 2250

LOW IDLE

control lever
position degree : 59.0
tolerance degree : + 4.0

SET IDLE AUXILIARY SPRING

Rated speed rpm : 400
rack travel mm : 5.40
Tolerance mm : + 0.10

Load pick-up

Rated speed rpm : 100
CRT mm min. : > 20.10

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1700
rack travel mm : 11.25
Tolerance mm : + 0.05
Rated speed rpm : 800
rack travel mm : 12.00
Tolerance mm : + 0.10
Rated speed rpm : 1300
rack travel mm : 11.60
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 38.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 2.0
Spread
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Rated speed rpm : 1300
Spreed
Del. quantity
cm3/1000 strokes : 37.8
Tolerance
cm3/1000 strokes : +- 0.8
Check tolerance
cm3/1000S. : +- 1.8
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

control lever
position degree : 87.0

BREAKAWAY

Full load CRT mm : 11.20
Rated speed rpm : 1745
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm3/1000 strokes : 52.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 59.0
tolerance degree : +- 4.0

control lever
position degree : 87.0

Adjustment of the control-rod travel
sensor

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.93
Test oil : ISO 4113
Combination No. : 0401876803
Injection pump
Pump designation : PE6P120A320RS3189
EP type number : 0411816777
Governor
Governor design. : RSV350...1250POA578
Governor no. : 0421833434

Cust. part No. : 866200

Customer-spec. information
Customer : PENTA
Motor : TWD 630ME

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1457413010

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 17.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 133.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 40.0
tolerance degree : + 4.0

control lever
position degree : 90.0
tolerance degree : + 4.0

rack travel mm : 10.75
Rated speed rpm : 1270
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1305
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1340

LOW IDLE

control lever
position degree : 62.0
tolerance degree : + 4.0

control lever
position degree : 12.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 5.00

Testing:

Rated speed rpm : 350
rack travel mm : 5.50
Tolerance mm : + 0.20

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : + 30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 11.75
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -

Rated speed rpm : 500
rack travel mm : 9.20
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : -
rack travel mm : 2.10
Tolerance mm : \pm 0.10

Pressure hPa : 240
rack travel mm : 0.20
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.75
Rated speed rpm : 1270
Tolerance 1/min : \pm 5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.10.93
Test oil : ISO 4113

Combination No. : 0402646782

Injection pump
Pump designation : PE6P120A320LS7864-1
EP type number : 0412626906

Governor
Governor design. : RQV350...1050PA1052
 : -3
Governor no. : 0421814069

Cust. part No. : 0250740602

Customer-spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power KW : 213.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 135
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

H08

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
 : 1

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 12.45
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 201.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.22
Tolerance mm : \pm 0.20

Rated speed rpm : 1108
guide sleeve
travel mm : 9.63
Tolerance mm : \pm 0.15

Rated speed rpm : 403
guide sleeve
travel mm : 1.97
Tolerance mm : \pm 0.25

Rated speed rpm : 453

H09

guide sleeve
travel mm : 2.52
Tolerance mm : \pm 0.25

Rated speed rpm : 770
guide sleeve
travel mm : 4.92
Tolerance mm : \pm 0.25

Rated speed rpm : 1320
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1190

Rack travel in mm : 11.40
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 201.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 105.0
tolerance degree : \pm 4.0

rack travel mm : 11.40
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1160
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 69.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 250
CRT mm min. : $>$ 8.70

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 10.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 0.45
Tolerance mm : \pm 0.05

Rated speed rpm : 500

rack travel mm : 1.80
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100

H10

Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 270
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 127.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 11.40
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : \pm 10.0

Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

Note remarks

Edition : 20.10.93
Test oil : ISO 4113

Injection pump
Pump designation : PES4A85D410/3RS2732
EP type number : 0410884947

Governor
Governor design. : RSV325...1175A8C2223
: -3L
Governor no. : 0420232574

```
Customer-spec. information
Customer      : KHD
Motor         : F4L913
Power KW      : 56.0
```

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Test nozzle holde
assembly : 0681343009

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

Test pressure bar : 26.0
Tolerance bar : \pm 1.0

```
Prestroke mm      :      2.55
Tolerance mm      :  + 0.05
```

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

```
Phasing      : 0-90-180-270
Tolerance    : + 0.50
Check
tolerance °NW : + 0.75
```

Rated speed rpm : 1175

Rack travel in mm : 9.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 68.5

Tolerance
cm³/1000 strokes : \pm 0.5

Check tolerance
cm³/1000s. : \pm 2.5

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
 cm3/1000S. : 4.5
 2nd speed rpm : 325
 Rack travel in mm : 6.00
 Tolerance mm : + 0.10
 Del. quantity
 cm3/1000 strokes : 11.0
 Tolerance
 cm3/1000 strokes : + 3.0
 Check tolerance
 cm3/1000S. : + 5.0
 Spread
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + 0.20
 governor spring
 pre-tension
 click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1175
 Del. quantity
 cm3/1000 strokes : 68.5
 Tolerance
 cm3/1000 strokes : + 0.5
 Check tolerance
 cm3/1000S. : + 2.5
 Spread
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 4.5

RATED SPEED

control lever
 position degree : 106.0
 tolerance degree : + 4.0

H13

rack travel mm : 8.90
 Rated speed rpm : 1220
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1260
 Tolerance 1/min : + 15

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1425

rack travel mm : 4.00
 Rated speed rpm : 1265

LOW IDLE

control lever
 position degree : 70.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 725
 rack travel mm : 5.50

Testing:

Rated speed rpm : 325
 rack travel mm : 6.00
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 480
 Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 500
 rack travel mm : 10.60
 Tolerance mm : + 0.05

Rated speed rpm : 800
 rack travel mm : 10.35
 Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 800

Del. quantity
cm³/1000 strokes : 62.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.5

BREAKAWAY

Rack travel in mm : 8.90
Rated speed rpm : 1220
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 6.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.12.93
Test oil : ISO 4113

Combination No. : 0402736846

Injection pump
Pump designation : PES6P120A120RS7298
EP type number : 0412726899

Governor
Governor design. : RQV400...1250PA1081K
Governor no. : 0421815360

Cust. part No. : 3924903

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power KW : 156.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413086

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 100
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750015

H15

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 11.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1
°NW after s.o.d. : 6.0
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.85
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 173.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 173.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 118.0
tolerance degree : \pm 6.0

rack travel mm : 12.80
Rated speed rpm : 1330
Tolerance 1/min : \pm 15

rack travel mm : 4.00
Rated speed rpm : 1485
Tolerance 1/min : \pm 5

rack travel mm : 0.50
Tolerance mm : \pm 0.50

Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 6.0

Testing:

Rated speed rpm : 400
rack travel mm : 6.20
Tolerance mm : \pm 0.20

Rated speed rpm : 300

CRT mm min. : $>$ 8.90

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 420

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.35
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
rack travel mm : 13.85
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 1250
rack travel mm : 9.70
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

rack travel mm : 12.80

Tolerance mm : \pm 0.20
rack travel mm : 10.85
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 290
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 141.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 91.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.80
Rated speed rpm : 1330
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.12.93
Test oil : ISO 4113

Combination No. : 0400075938T8

Injection pump
Pump designation : PES5M55C320RS170
EP type number :

Governor
Governor design. : RSF350/2300M71-3
Governor no. :

Cust. part No. : T8

Customer-spec. information

Customer : MB-PKW
Motor : OM602-ECE MJ90
Power KW : 66.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

H18

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 19.5
Tolerance : ± 0.20

Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 33.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

Rack travel in mm : 6.60

Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure

ALDA / ADA hPa : 1100

Del. quantity

cm³/1000 strokes : 33.5

Tolerance

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000S. : ± 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

RATED SPEED

control lever

position degree : 50.0

rack travel mm : 8.70

Rated speed rpm : 2500

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.25

LOW IDLE

control lever

position degree : 14.0

tolerance degree : ± 2.0

Setting point w/out bumper spring

Rated speed rpm : 350

rack travel mm : 6.60

SET IDLE AUXILIARY SPRING

Rated speed rpm : 400

rack travel mm : 5.50

Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 720

Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 220

CRT mm min. : > 10.00

Rated speed rpm : 1000

CRT mm max. : 1.25

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 12.35

Tolerance mm : ± 0.05

Rated speed rpm : 1800

rack travel mm : 11.80

Tolerance mm : ± 0.10

Rated speed rpm : 2200

rack travel mm : 11.50

Tolerance mm : ± 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000

Ref. pressure

ALDA / ADA hPa : 950

rack travel mm : 0.10

Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1000

Ref. pressure
 ALDA / ADA hPa : 900
 rack travel mm : 0.60
 Tolerance mm : \pm 0.10

 Rated speed rpm : 1000
 Ref. pressure
 ALDA / ADA hPa : 750
 rack travel mm : 2.00
 Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 1800
 Del. quantity
 cm³/1000 strokes : 33.8
 Tolerance
 cm³/1000 strokes : \pm 0.8
 Check tolerance
 cm³/1000S. : \pm 1.8
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 2200
 Spreed
 Del. quantity
 cm³/1000 strokes : 35.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

HIGH IDLE

Ref. pressure
 ALDA / ADA hPa : 1100

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.10

H2O

Del. quantity
 cm³/1000 strokes : 52.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 6.0

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 49.00
 degree : < 46.50

SETTING PNEUMATIC FAST IDLE (ELA) (PLA) POSITION

control lever
 position degree : VWL
 Rated speed rpm : 400

Rack travel in mm : 7.60
 Tolerance mm : \pm 0.15
 Del. quantity
 cm³/1000 strokes : 10.5
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Vacuum hPa : 400.0

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
 position degree : 14.0
 tolerance degree : \pm 2.0

control lever
 position degree : 50.0

Adjustment of the control-rod travel
sensor

control lever
 position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.12.93
Test oil : ISO 4113

Combination No. : 0400075941T8

Injection pump
Pump designation : PES5M55C320RS173
EP type number :

Governor
Governor design. : RSF350/2300M56-11
Governor no. :

Cust. part No. : T8

Customer-spec. information

Customer : MB-PKW
Motor : OM602-Abgl. MJ90
Power kW : 64.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

H21

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 1.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 17.0
Tolerance : ± 0.20

Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 33.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

Rack travel in mm : 5.30

Tolerance mm : \pm 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Del. quantity

cm³/1000 strokes : 33.0

Tolerance

cm³/1000 strokes : \pm 0.5

Check tolerance

cm³/1000S. : \pm 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

RATED SPEED

control lever

position degree : 50.0

rack travel mm : 9.10

Rated speed rpm : 2500

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever

position degree : 14.0

H22

tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 5.30

SET IDLE AUXILIARY SPRING

Rated speed rpm : 350

rack travel mm : 6.50

Tolerance mm : \pm 0.10

rack travel mm : 2.50

Rated speed rpm : 670

Tolerance 1/min : \pm 50

Load pick-up

Rated speed rpm : 220

CRT mm min. : $>$ 10.00

Rated speed rpm : 1000

CRT mm max. : 1.45

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 12.45

Tolerance mm : \pm 0.05

Rated speed rpm : 1800

rack travel mm : 11.90

Tolerance mm : \pm 0.10

Rated speed rpm : 2200

rack travel mm : 11.60

Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000

rack travel mm : 0.10

Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1000

rack travel mm : 0.60

Tolerance mm : \pm 0.10

Rated speed rpm : 1000

rack travel mm : 2.00

Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1800
Del. quantity
cm³/1000 strokes : 35.3
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000s. : \pm 1.8
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000s. : 3.0

Rated speed rpm : 2200
Speed
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 2.0
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000s. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm³/1000 strokes : 52.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 6.0

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 49.00
degree : < 46.50

SETTING PNEUMATIC FAST IDLE (ELA) (PLA) POSITION

control lever
position degree : VWL
Rated speed rpm : 400
Rack travel in mm : 7.40
Tolerance mm : \pm 0.70
Del. quantity
cm³/1000 strokes : 10.5
Tolerance
cm³/1000 strokes : \pm 3.0
Vacuum hPa : 400.0

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 14.0
tolerance degree : \pm 2.0

control lever
position degree : 50.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.03.94
Test oil : ISO 4113

Combination No. : 0400075923

Injection pump
Pump designation : PES5M55C320RS168
EP type number : 0410055978

Governor
Governor design. : RSF350/2000M55-8
Governor no. : 0420021269

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM602-2.9L
Power KW : 70.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

H24

x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 15.5
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 38.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Spreed	
Tolerance	
cm3/1000 strokes :	2.5
Check tolerance	
cm3/1000S. :	3.0
Rack travel in mm :	4.10
Tolerance mm :	+ 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1000
Del. quantity	
cm3/1000 strokes :	38.5
Tolerance	
cm3/1000 strokes :	+ 0.5
Check tolerance	
cm3/1000S. :	+ 1.5
Spreed	
Tolerance	
cm3/1000 strokes :	2.5
Check tolerance	
cm3/1000S. :	3.0

RATED SPEED

control lever	
position degree :	50.0
rack travel mm :	8.90
Rated speed rpm :	2200
rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	2550

SET IDLE CONTROL LEVER POSITION

Rated speed rpm :	1000
CRT mm max. :	1.45

LOW IDLE

control lever	
position degree :	14.0

tolerance degree :	+ 2.0
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Setting point w/out bumper spring	
Rated speed rpm :	450
rack travel mm :	4.10

SET IDLE AUXILIARY SPRING

Rated speed rpm :	350
rack travel mm :	5.30
Tolerance mm :	+ 0.10

Load pick-up

Rated speed rpm :	250
CRT mm min. :	> 9.20
Rated speed rpm :	1000
CRT mm max. :	1.45

TORQUE CONTROL

Rated speed rpm :	1000
rack travel mm :	12.15
Tolerance mm :	+ 0.05
Rated speed rpm :	1800
rack travel mm :	12.00
Tolerance mm :	+ 0.10
Rated speed rpm :	2000
rack travel mm :	11.80
Tolerance mm :	+ 0.10

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm :	1800
Del. quantity	
cm3/1000 strokes :	40.8
Tolerance	
cm3/1000 strokes :	+ 0.8
Check tolerance	
cm3/1000S. :	+ 1.8
Spreed	
Tolerance	
cm3/1000 strokes :	2.5
Check tolerance	
cm3/1000S. :	3.0

Rated speed rpm :	2000
Spreed	

Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm³/1000 strokes : 54.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 47.00
degree : < 44.50

SETTING PNEUMATIC FAST IDLE (ELA) (PLA) POSITION

control lever
position degree : VWL
Rated speed rpm : 400

Rack travel in mm : 6.10
Tolerance mm : ± 0.80
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : ± 4.0

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 14.0
tolerance degree : ± 2.0

control lever
position degree : 50.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.04.94
Test oil : ISO 4113

Combination No. : 0400866177

Injection pump
Pump designation : PES6A95D120RS2773
EP type number : 0410896904

Governor
Governor design. : RSV410...1050A0C2260
: -2R
Governor no. : 0420233342

Cust. part No. :

Customer spec. information
Customer : CUMMINS
Motor : 6 BT
Power KW : 150.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Hydraulic latching of starting delivery.

Start-of-delivery mark 11.5° cam angle after start of delivery cyl. 1

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.15
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

°NW after s.o.d. : 11.5
S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 11.5
Check
tolerance °NW : ± 0.55

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.00
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 97.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

2nd speed rpm : 410

Rack travel in mm : 7.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

RATED SPEED

control lever
position degree : 85.0
tolerance degree : \pm 4.0

rack travel mm : 10.00
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1175
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1195

LOW IDLE

control lever
position degree : 66.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 410
rack travel mm : 6.50

Testing:

Rated speed rpm : 410
rack travel mm : 7.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 520
Tolerance 1/min : \pm 30

Rated speed rpm : 100
CRT mm min. : $>$ 19.50

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 11.00
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 11.05
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.00
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.50
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 260
rack travel mm : 9.90
Tolerance mm : \pm 0.10

Pressure hPa : 550
rack travel mm : 10.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 86.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.00
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 410
rack travel mm : 7.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.04.94
Test oil : ISO 4113

Combination No. : 0402646783

Injection pump
Pump designation : PE6P120A320LS7858
EP type number : 0412626875

Governor
Governor design. : RQV300...1050PA1065
: -1
Governor no. : 0421814068

Cust. part No. : 0250740002

Customer-spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power KW : 180.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 171.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.13
Tolerance mm : + 0.20

Rated speed rpm : 1107
guide sleeve
travel mm : 9.80
Tolerance mm : + 0.15

Rated speed rpm : 370
guide sleeve
travel mm : 2.00
Tolerance mm : + 0.25

Rated speed rpm : 420

guide sleeve
travel mm : 2.43
Tolerance mm : + 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.87
Tolerance mm : + 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1210

Rack travel in mm : 10.10
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 171.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 102.0
tolerance degree : + 4.0

rack travel mm : 10.15
Rated speed rpm : 1095
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1150
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 66.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 8.10

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 550
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 400
rack travel mm : 10.55
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
rack travel mm : 11.15
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 400
rack travel mm : 10.30
Tolerance mm : \pm 0.15

Rated speed rpm : 400
rack travel mm : 10.85
Tolerance mm : \pm 0.10

rack travel mm : 10.55
Tolerance mm : \pm 0.05

J04

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 220
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 162.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 119.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 4.5

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

BREAKAWAY

Rack travel in mm : 10.15
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.04.94
Test oil : ISO 4113

Combination No. : 0402648931

Injection pump
Pump designation : PE8P120A320LS7847-2
EP type number : 0412628885

Governor
Governor design. : RQ300/950PA1032-7
Governor no. : 0421801715

Cust. part No. : 0230741302

Customer-spec. information
Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 239.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.74
Tolerance mm : \pm 0.10

Rated speed rpm : 1005
guide sleeve
travel mm : 6.84
Tolerance mm : \pm 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.50
Tolerance mm : \pm 0.10

Rated speed rpm : 736

guide sleeve
travel mm : 6.13
Tolerance mm : \pm 0.10

Rated speed rpm : 415
guide sleeve
travel mm : 3.82
Tolerance mm : \pm 0.10

Rated speed rpm : 550
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1160
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

Rated speed rpm : 833
guide sleeve
travel mm : 6.38
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : ∞

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 239.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 97.0
tolerance degree : \pm 4.0

rack travel mm : 13.00
Rated speed rpm : 998
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1085
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 420
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 7.50

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.80
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 14.00
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 14.10
Tolerance mm : \pm 0.10

Rated speed rpm : 875
rack travel mm : 14.25
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 14.75
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 12.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
rack travel mm : 14.80
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 400
rack travel mm : 10.40
Tolerance mm : \pm 0.15

Rated speed rpm : 400
rack travel mm : 12.90
Tolerance mm : \pm 0.10

rack travel mm : 11.90
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 214.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 166.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 4.5

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 108.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0
Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 998
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.80
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.70
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.04.94
Test oil : ISO 4113

Combination No. : 0402648945

Injection pump
Pump designation : PE8P120A320LS7847-3
EP type number : 0412628886

Governor
Governor design. : RQ300/1050PA1030-10
Governor no. : 0421801718

Cust. part No. : 0230747802

Customer-spec. information
Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.00

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.30
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.79
Tolerance mm : \pm 0.10

Rated speed rpm : 1104
guide sleeve
travel mm : 6.65
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.30
Tolerance mm : \pm 0.10

Rated speed rpm : 792
guide sleeve
travel mm : 6.08
Tolerance mm : \pm 0.10

Rated speed rpm : 414
guide sleeve
travel mm : 3.88
Tolerance mm : \pm 0.10

Rated speed rpm : 550
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1270
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

Rated speed rpm : 847
guide sleeve
travel mm : 6.23
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 70.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 226.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 99.0
tolerance degree : \pm 4.0

rack travel mm : 12.50
Rated speed rpm : 1098
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : \pm 15

rack travel mm : 0.70
Tolerance mm : \pm 0.70
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.30
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 405
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 7.10

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.00
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 13.60
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 13.80
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 14.00
Tolerance mm : \pm 0.05

Rated speed rpm : 400
rack travel mm : 12.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
rack travel mm : 14.00
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 400
rack travel mm : 9.70
Tolerance mm : \pm 0.15

Rated speed rpm : 400

rack travel mm : 12.40
Tolerance mm : \pm 0.10

rack travel mm : 11.40
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 212.0

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 166.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.50
Rated speed rpm : 1098
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000s. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.30
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.04.94
Test oil : ISO 4113

Combination No. : 0402648975

Injection pump
Pump designation : PE8P120A320LS7840-1
EP type number : 0412628862

Governor
Governor design. : RQV350...950PA1123
Governor no. : 0421814085

Cust. part No. : 0230747102

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 A
Power KW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 90
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 0.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.30

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 211.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 5.70
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.78
Tolerance mm : \pm 0.15

Rated speed rpm : 995
guide sleeve
travel mm : 9.41
Tolerance mm : \pm 0.20

Rated speed rpm : 370
guide sleeve
travel mm : 2.00
Tolerance mm : \pm 0.25

Rated speed rpm : 420
guide sleeve
travel mm : 2.54
Tolerance mm : \pm 0.25

Rated speed rpm : 690
guide sleeve
travel mm : 4.79
Tolerance mm : \pm 0.25

Rated speed rpm : 1200
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1090

Rack travel in mm : 12.30
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 211.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 102.0
tolerance degree : \pm 4.0

rack travel mm : 12.30
Rated speed rpm : 995
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1070
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 69.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.70
Tolerance mm : \pm 0.10

Rated speed rpm : 250
CRT mm min. : $>$ 9.10

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 430

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.30
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 0.40
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 1.80
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 270
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 995
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm	:	350
rack travel mm	:	5.70
Tolerance mm	:	+ 0.30
Del. quantity		
cm ³ /1000 strokes	:	13.0
Tolerance		
cm ³ /1000 strokes	:	+ 3.0
Check tolerance		
cm ³ /1000S.	:	+ 6.0
Spreed		
Tolerance		
cm ³ /1000 strokes	:	8.0
Check tolerance		
cm ³ /1000S.	:	12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.04.94
Test oil : ISO 4113
Combination No. : 0403486109
Injection pump
Pump designation : PES6MW100/321RS1208
EP type number : 0413406199
Governor
Governor design. : RSV350...1000MW1A360
: -2
Governor no. : 0420085240
Cust. part No. : 3-7312

Customer-spec. information
Customer : MAN
Motor : D0826LE103
Power kW : 161.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413047
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test Lines : 1680750008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 3.55
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 17.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 970
Rack travel in mm : 14.90
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 151.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

Del. quantity
cm3/1000 strokes : 13.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : + 0.35

governor spring

pre-tension

click setting x : 3.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 970

Del. quantity

cm3/1000 strokes : 151.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000S. : + 4.0

Spread

Tolerance

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000S. : 7.5

RATED SPEED

control lever
position degree : 91.0
tolerance degree : + 4.0

rack travel mm : 13.90
Rated speed rpm : 1025
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1085
Tolerance 1/min : + 5

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1150

rack travel mm : 4.00
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 68.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.50

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : + 0.20

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 970
rack travel mm : 14.90
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 14.90
Tolerance mm : + 0.10

Rated speed rpm : 700
rack travel mm : 14.90
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 158.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

BREAKAWAY

Rack travel in mm : 13.90
Rated speed rpm : 1025
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.06.94
Test oil : ISO 4113
Combination No. : 0403246032
Injection pump
Pump designation : PES6MW100/720RS1515
: -1
EP type number : 0413206021
Governor
Governor design. : RQV300...1300MW125
: -5
Governor no. : 0420083285
Cust. part No. : 0220746002

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 142.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1638901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prastroke mm : 5.25
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 11.00
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 12.35
Tolerance mm : ± 0.05
Del. quantity
cm3/1000 strokes : 111.0
Tolerance
cm3/1000 strokes : ± 1.0
Check tolerance
cm3/1000s. : ± 3.0
Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1340

Rack travel in mm : 16.50

Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Del. quantity
cm³/1000 strokes : 111.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

RATED SPEED

control lever
position degree : 116.0
tolerance degree : ± 4.0

rack travel mm : 11.30
Rated speed rpm : 1345
Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1465
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50

Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 62.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.80
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 5.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 12.35
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 12.35
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
rack travel mm : 12.35
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 8.45
Tolerance mm : ± 0.10

Rated speed rpm : 500

rack travel mm : 10.90
Tolerance mm : ± 0.10

rack travel mm : 9.20
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 106.5
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 44.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 11.30
Rated speed rpm : 1345
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.06.94
Test oil : ISO 4113

Combination No. : 0402046825

Injection pump
Pump designation : PES6P110A720LS3282
: -1
EP type number : 0412016746

Governor
Governor design. : RQ300/1100PA800-3
Governor no. : 0421801705

Cust. part No. : 0200747602

Customer-spec. information
Customer : MB-NFZ
Motor : OM447 h
Power KW : 157.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 137.0

Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 3.5
Spreed	
Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance	
cm3/1000S.	: 8.0
2nd speed rpm	: 300
Rack travel in mm	: 8.30
Tolerance mm	: + 0.15
Del. quantity	
cm3/1000 strokes	: 17.0
Tolerance	
cm3/1000 strokes	: + 3.0
Check tolerance	
cm3/1000S.	: + 6.0
Spreed	
Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance	
cm3/1000S.	: 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve	
travel mm	: 3.22
Tolerance mm	: + 0.10
Rated speed rpm	: 1151
guide sleeve	
travel mm	: 7.36
Tolerance mm	: + 0.10
Rated speed rpm	: 1100
guide sleeve	
travel mm	: 7.00
Tolerance mm	: + 0.10
Rated speed rpm	: 1144
guide sleeve	
travel mm	: 7.15
Tolerance mm	: + 0.10
Rated speed rpm	: 430
guide sleeve	
travel mm	: 7.00

Tolerance mm	: + 0.10
Rated speed rpm	: 1300
guide sleeve	
travel mm	: 11.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 600
Rack travel in mm	: 14.20
Tolerance mm	: + 0.40

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
Aneroid pressure	
hPa	: -
Del. quantity	
cm3/1000 strokes	: 137.0
Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 3.5
Spreed	
Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance	
cm3/1000S.	: 8.0

RATED SPEED

control lever	
position degree	: 110.0
tolerance degree	: + 4.0
rack travel mm	: 12.15
Rated speed rpm	: 1145
Tolerance 1/min	: + 5
rack travel mm	: 4.00
Rated speed rpm	: 1235
Tolerance 1/min	: + 15
rack travel mm	: 1.20
Tolerance mm	: + 1.20
Rated speed rpm	: 1300

LOW IDLE

control lever	
position degree	: 79.0
tolerance degree	: + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 350
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 8.80

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.15
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.15
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 114.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

BREAKAWAY

Rack travel in mm : 12.15
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 140.0

Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 8.30
Tolerance mm : \pm 0.15
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.06.94
Test oil : ISO 4113

Combination No. : 0403476099A

Injection pump
Pump designation : PES6MW100/320RS1209
EP type number : 0413406200

Governor
Governor design. : RSV300...900MW1A802
Governor no. : 0420085113

Cust. part No. : 3-7112

Customer-spec. information
Customer : MAN
Motor : D0826LE20
Power KW : 141.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1681901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

J27

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 15.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 14.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 149.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Del. quantity
cm³/1000 strokes : 36.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 2.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850

Del. quantity
cm³/1000 strokes : 149.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance

cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 92.0
tolerance degree : + 4.0

LOW IDLE

control lever
position degree : 68.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : + 0.40

rack travel mm : 2.00
Rated speed rpm : 340
Tolerance 1/min : + 30

Rated speed rpm : 100

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 14.85
Tolerance mm : + 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 140.0

Tolerance
cm³/1000 strokes : + 10.0

Check tolerance
cm³/1000S. : + 13.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 36.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread

Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000s. : 9.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.06.94
Test oil : ISO 4113
Combination No. : 0403486108
Injection pump
Pump designation : PES6MW100/321RS1208
EP type number : 0413406199
Governor
Governor design. : RSV350...900MW1A360
: -1
Governor no. : 0420085239
Cust. part No. : 3-7311

Customer spec. information

Customer : MAN
Motor : D0826LE102
Power KW : 154.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 870

Rack travel in mm : 14.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 159.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spread
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

Del. quantity
cm3/1000 strokes : 13.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : \pm 0.35

governor spring
pre-tension

click setting x : 3.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 870

Del. quantity
cm3/1000 strokes : 159.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spread
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

RATED SPEED

K03

control lever
position degree : 91.0
tolerance degree : \pm 4.0

rack travel mm : 13.80
Rated speed rpm : 920
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 970
Tolerance 1/min : \pm 5

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1050

rack travel mm : 4.00
Rated speed rpm : 980

LOW IDLE

control lever
position degree : 48.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.50

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 870
rack travel mm : 14.90
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 14.90
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 14.90
Tolerance mm : \pm 0.10

Check tolerance : 5.5
cm3/1000S.

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 150.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 5.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 158.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 5.0

BREAKAWAY

Rack travel in mm : 13.80
Rated speed rpm : 920
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 150.0
Tolerance
cm3/1000 strokes : \pm 10.0
Check tolerance
cm3/1000S. : \pm 13.0

LOW IDLE

Del. quantity
cm3/1000 strokes : 13.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 4.5
Spreed
Tolerance
cm3/1000 strokes : 3.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.06.94
Test oil : ISO 4113
Combination No. : 0403246031
Injection pump
Pump designation : PES6MW100/72ORS1515
: -1
EP type number : 0413206021
Governor
Governor design. : RQV300...1300MW125
: -4
Governor no. : 0420083284
Cust. part No. : 0220745902

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 127.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750089
Outside diameter : 8.0

K05

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 5.25
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 21.00
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 11.25
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.40
Tolerance mm : ± 0.25

Rated speed rpm : 1354
guide sleeve
travel mm : 8.68
Tolerance mm : ± 0.25

Rated speed rpm : 881
guide sleeve
travel mm : 5.02
Tolerance mm : ± 0.25

Rated speed rpm : 363
guide sleeve
travel mm : 2.05
Tolerance mm : ± 0.25

Rated speed rpm : 413
guide sleeve
travel mm : 2.44
Tolerance mm : ± 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 2.99
Tolerance mm : ± 0.25

Rated speed rpm : 1600
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1350

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Del. quantity
cm³/1000 strokes : 100.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

RATED SPEED

control lever
position degree : 121.0
tolerance degree : ± 4.0

rack travel mm : 10.20
Rated speed rpm : 1345
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1445
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 66.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.50
Tolerance mm : ± 0.15

Rated speed rpm : 200

CRT mm min. : > 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.25
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
rack travel mm : 11.25
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 8.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 10.10
Tolerance mm : \pm 0.10

rack travel mm : 8.80
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 92.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed

Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 44.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.20
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.09.94
Test oil : ISO 4113

Combination No. : 0401840777

Injection pump
Pump designation : PE12P120A520/4LS3840
EP type number : 0411820724

Governor
Governor design. : RQV250...1150PA668
: -7
Governor no. : 0421814117

Cust. part No. :

Customer-spec. information
Customer : DAEWOO
Motor : D2842LE
Power KW : 440.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test Lines : 1680750075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 12- 1- 5- 9- 8
: - 3- 4- 11- 10
: - 2- 6- 7

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 12

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 11.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 201.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1150

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 201.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 66.0
tolerance degree : ± 4.0

rack travel mm : 10.90
Rated speed rpm : 1195
Tolerance 1/min : ± 5

rack travel mm : 4.00
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 12.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 7.00
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 430
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 8.50

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 11.95
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 200
Check
speed 1/min : < 220

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 1195
Tolerance 1/min : ± 5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.09.94
Test oil : ISO 4113

Combination No. : 0400064500

Injection pump
Pump designation : PES4M55C32ORS167
EP type number :

Governor
Governor design. : RSF375/2000M55-7
Governor no. :

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601-2.3L
Power KW : 59.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

K10

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-J-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 15.5
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 38.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

2nd speed rpm : 375

Rack travel in mm : 5.20

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 6.5

Tolerance
cm³/1000 strokes : \pm 0.5

Spread
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25
Tolerance mm : \pm 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 38.5
Tolerance
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 1.5
Spread
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0
rack travel mm : 8.90
Rated speed rpm : 2200

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 2550

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever
position degree : 14.0
tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 375
rack travel mm : 5.20

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Load pick-up

Rated speed rpm : 250

CRT mm min. : > 10.20

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 5.20
Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.15
Tolerance mm : \pm 0.05

Rated speed rpm : 1800
rack travel mm : 11.90
Tolerance mm : \pm 0.10

Rated speed rpm : 2000
rack travel mm : 11.80
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1800

Del. quantity
 cm3/1000 strokes : 40.8
 Tolerance
 cm3/1000 strokes : \pm 0.8
 Check tolerance
 cm3/1000S. : \pm 1.8
 Spreed
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 3.0

 Rated speed rpm : 2000
 Spreed
 Del. quantity
 cm3/1000 strokes : 41.0
 Tolerance
 cm3/1000 strokes : \pm 1.0
 Check tolerance
 cm3/1000S. : \pm 2.0
 Spreed
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 3.0

HIGH IDLE

Rated speed rpm : 2200
 rack travel mm : 8.90
 Tolerance mm : \pm 0.25
 Del. quantity
 cm3/1000 strokes : 31.0
 Tolerance
 cm3/1000 strokes : \pm 2.0
 Check tolerance
 cm3/1000S. : \pm 3.0
 Spreed
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.10
 Del. quantity
 cm3/1000 strokes : 54.0
 Spreed
 Tolerance
 cm3/1000 strokes : 6.0
 Check tolerance
 cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 375
 rack travel mm : 5.20
 Tolerance mm : \pm 0.10
 Del. quantity
 cm3/1000 strokes : 7.8
 Check tolerance
 cm3/1000S. : \pm 2.3
 Spreed
 Check tolerance
 cm3/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : $>$ 47.00
 degree : $<$ 44.50

SETTING PNEUMATIC FAST IDLE (ELA) (PLA) POSITION

control lever
 position degree : VWL
 Rated speed rpm : 425

Rack travel in mm : 7.30
 Tolerance mm : \pm 0.80
 Vacuum hPa : 400.0

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
 position degree : 14.0
 tolerance degree : \pm 2.0

control lever
 position degree : 50.0

Adjustment of the control-rod travel sensor

control lever
 position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.09.94
Test oil : ISO 4113

Combination No. : 0400065500

Injection pump
Pump designation : PES5M55C320RS168
EP type number :

Governor
Governor design. : RSF350/2000M55-8
Governor no. :

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM602-2.9L
Power KW : 70.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 15.5
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 38.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Spreed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

2nd speed rpm : 350

Rack travel in mm : 5.30

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 6.5

Tolerance

cm³/1000 strokes : \pm 0.5

Spreed

Tolerance

cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25

Tolerance mm : \pm 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Del. quantity

cm³/1000 strokes : 38.5

Tolerance

cm³/1000 strokes : \pm 0.5

Check tolerance

cm³/1000S. : \pm 1.5

Spreed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

rack travel mm : 8.90

Rated speed rpm : 2200

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 2550

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever

position degree : 14.0

tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 350

rack travel mm : 5.30

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450

rack travel mm : 4.10

Tolerance mm : \pm 0.10

Load pick-up

Rated speed rpm : 250

CRT mm min. : $>$ 9.20

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 5.30

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 12.15

Tolerance mm : \pm 0.05

Rated speed rpm : 1800

rack travel mm : 12.00

Tolerance mm : \pm 0.10

Rated speed rpm : 2000

rack travel mm : 11.80

Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1800
Del. quantity
cm³/1000 strokes : 40.8
Tolerance
cm³/1000 strokes : ± 0.8
Check tolerance
cm³/1000S. : ± 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Rated speed rpm : 2000
Spreed
Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

HIGH IDLE

Rated speed rpm : 2200
rack travel mm : 8.90
Tolerance mm : ± 0.25
Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm³/1000 strokes : 54.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 5.30
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : ± 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 47.00
degree : < 44.50

SETTING PNEUMATIC FAST IDLE (ELA) (PLA) POSITION

control lever
position degree : VWL
Rated speed rpm : 400

Rack travel in mm : 6.10
Tolerance mm : ± 0.80
Vacuum hPa : 400.0

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 14.0
tolerance degree : ± 2.0

control lever
position degree : 50.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.09.94
Test oil : ISO 4113

Combination No. : 0400074884

Injection pump
Pump designation : PES4M55C320RS184
EP type number : 0410054938

Governor
Governor design. : RSF375/1900M77
Governor no. : 0420021273

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601-2.3L
Power KW : 58.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 4.5

x inside diameter : 2.0

K16

x length mm : 434

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
°NW after s.o.d. : 16.5
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1850

Rack travel in mm : 12.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 42.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Spreed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

2nd speed rpm : 375

Rack travel in mm : 5.00

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 6.5

Tolerance

cm³/1000 strokes : \pm 0.5

Spreed

Tolerance

cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25

Tolerance mm : \pm 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1850

Del. quantity

cm³/1000 strokes : 42.0

Tolerance

cm³/1000 strokes : \pm 0.5

Check tolerance

cm³/1000S. : \pm 1.5

Spreed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

rack travel mm : 5.80

Rated speed rpm : 2200

rack travel mm : 0.50

Tolerance mm : \pm 0.50

K17

Rated speed rpm : 2400

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever

position degree : 14.0

tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 375

rack travel mm : 5.00

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450

rack travel mm : 3.70

Tolerance mm : \pm 0.10

Load pick-up

Rated speed rpm : 250

CRT mm min. : $>$ 10.20

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 5.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1850

rack travel mm : 12.30

Tolerance mm : \pm 0.05

Rated speed rpm : 1000

rack travel mm : 12.30

Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000

Ref. pressure
ALDA / ADA hPa : 940
rack travel mm : -0.20
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.50
Tolerance mm : + 0.10

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -1.50
Tolerance mm : + 0.20

HIGH IDLE

Rated speed rpm : 2200
rack travel mm : 5.80
Tolerance mm : + 0.25
Del. quantity
cm3/1000 strokes : 16.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 3.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm3/1000 strokes : 54.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 375
rack travel mm : 5.00
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 7.8
Check tolerance
cm3/1000S. : + 2.3
Spreed
Check tolerance
cm3/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 47.00

degree : < 44.50

SETTING PNEUMATIC FAST IDLE (ELA) (PLA) POSITION

control lever
position degree : VWL
Rated speed rpm : 425

Rack travel in mm : 7.30
Tolerance mm : + 0.80
Vacuum hPa : 400.0

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 14.0
tolerance degree : + 2.0

control lever
position degree : 50.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.09.94
Test oil : ISO 4113

Combination No. : 0400074083T8

Injection pump
Pump designation : PES4M55C320RS106-1
EP type number :

Governor
Governor design. : RSV350...1650MOC350
Governor no. :

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM616 (2,4 L)
Power KW : 46.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413012

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

K19

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 1.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 13.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 39.2

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Spread

Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 3.0

2nd speed rpm : 350
 Del. quantity
 cm³/1000 strokes : 8.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 1.8
 Spreed
 Tolerance
 cm³/1000 strokes : 1.0
 Check tolerance
 cm³/1000S. : 1.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : ± 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
 Del. quantity
 cm³/1000 strokes : 39.2
 Tolerance
 cm³/1000 strokes : ± 0.5
 Check tolerance
 cm³/1000S. : ± 1.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 3.0

RATED SPEED

control lever
 position degree : 76.0
 rack travel mm : 12.00
 Tolerance 1/min : ± 5
 Rated speed rpm : 1675
 rack travel mm : 4.50
 Rated speed rpm : 1760
 Tolerance 1/min : ± 15
 rack travel mm : 1.00
 Tolerance mm : ± 0.70
 Rated speed rpm : 2050

K20

LOW IDLE

control lever
 position degree : 40.0
 tolerance degree : ± 4.0

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

Load pick-up

rack travel mm : 6.70
 Rated speed rpm : 350

SET IDLE AUXILIARY SPRING

Rated speed rpm : 100

TORQUE CONTROL

Rated speed rpm : 1200
 rack travel mm : 0.05
 Tolerance mm : ± 0.05

Rated speed rpm : 1630
 rack travel mm : 13.05
 Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1630
 Del. quantity
 cm³/1000 strokes : 40.2
 Tolerance
 cm³/1000 strokes : ± 0.5
 Check tolerance
 cm³/1000S. : ± 1.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

BREAKAWAY

Full load CRT mm : 12.00
 Rated speed rpm : 1675

Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.30
Del. quantity
cm³/1000 strokes : 53.0
Spreed
Tolerance
cm³/1000 strokes : 6.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 6.70
Tolerance mm : +- 0.10

SETTING/TESTING ELECTRONIC IDLE
REGULATION (ELR)

control lever
position degree : 40.0
tolerance degree : +- 4.0

control lever
position degree : 76.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 76.0

Note remarks

Edition : 20.09.94
Test oil : ISO 4113

Injection pump
Pump designation : PES4M55C320RS175
EP type number :

Cust. part No. : T 8

Customer : MB-NFZ
Motor : OM601 (2,3L)
Power KW : 51.0

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Inlet press. bar : 1.0

Opening pressure
bar : 148.5
Tolerance bar : \pm 1.5

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

Test pressure bar : 31.0
Tolerance bar : \pm 1.0

test only : ± 0.10

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

S.o.d. blocking
Barrel no. : 1

```

°NW after s.o.d. :      15.5
Tolerance         : +  0.20
Check
tolerance °NW     : +  0.30

```

Rated speed rpm : 1630

Del. quantity
cm³/1000 strokes : 40.0

Tolerance
cm³/1000 strokes : \pm 0.5

Check tolerance
cm³/1000S. : + 1.5

Spread

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

2nd speed rpm : 350

Del. quantity
cm³/1000 strokes : 7.0

Tolerance
cm³/1000 strokes : + 1.0

Spread
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1630
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : + 0.5
Check tolerance
cm³/1000S. : + 1.5
Spread
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 113.0

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 2000

LOW IDLE

control lever
position degree : 76.0
tolerance degree : + 4.0

Load pick-up

Rated speed rpm : 100
CRT mm min. : > 20.10
rack travel mm : 5.40
Rated speed rpm : 350

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1630
rack travel mm : 12.15
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 12.70
Tolerance mm : + 0.10

Rated speed rpm : 1400
rack travel mm : 12.40
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 40.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 2.0
Spread
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Rated speed rpm : 1400
Spread
Del. quantity
cm³/1000 strokes : 39.8

Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm³/1000 strokes : 52.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 5.40
Tolerance mm : \pm 0.10

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 76.0
tolerance degree : \pm 4.0

control lever
position degree : 113.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 113.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.09.94
Test oil : ISO 4113

Combination No. : 0400074089T8

Injection pump
Pump designation : PES4M55C320RS175
EP type number :

Governor
Governor design. : RSV350...1500MOC353
: -10
Governor no. :

Cust. part No. : T8

Customer-spec. information
Customer : MB-NFZ
Motor : OM601 (2,3L)
Power KW : 44.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 1.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 15.5
Tolerance : ± 0.20

Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1480

Rack travel in mm : 11.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 37.5

Tolerance
cm³/1000 strokes : \pm 0.5

Check tolerance
cm³/1000S. : \pm 1.5

Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

2nd speed rpm : 350
Del. quantity
cm³/1000 strokes : 7.0
Tolerance
cm³/1000 strokes : \pm 1.0
Speed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : \pm 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1480
Del. quantity
cm³/1000 strokes : 37.5
Tolerance
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 1.5
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

RATED SPEED

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1750

LOW IDLE

Load pick-up

Rated speed rpm : 100
CRT mm min. : > 20.10
rack travel mm : 5.40
Rated speed rpm : 350

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1480
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
rack travel mm : 12.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1350
rack travel mm : 12.20
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 40.7
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Rated speed rpm : 1350
Speed
Del. quantity
cm³/1000 strokes : 39.5
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Speed

Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm³/1000 strokes : 52.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 5.40
Tolerance mm : ± 0.10

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.09.94
Test oil : ISO 4113

Combination No. : 0400074892T8

Injection pump
Pump designation : PES4M55C320RS167
EP type number :

Governor
Governor design. : RSF360/1900M70-7
Governor no. :

Cust. part No. : T8

Customer-spec. information

Customer : MB-NFZ
Motor : OM601-D23 A,S,CH
Power KW : 58.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

*NW after s.o.d. : 15.5
Tolerance : ± 0.20
Check
tolerance *NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 41.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

2nd speed rpm : 335

Rack travel in mm : 5.20

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 6.5

Tolerance

cm³/1000 strokes : \pm 0.5

Speed

Tolerance

cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25

Tolerance mm : \pm 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure

ALDA / ADA hPa : 1100

Del. quantity

cm³/1000 strokes : 41.5

Tolerance

cm³/1000 strokes : \pm 0.5

Check tolerance

cm³/1000S. : \pm 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

rack travel mm : 7.25

Rated speed rpm : 2100

rack travel mm : 0.50

L01

Tolerance mm : \pm 0.50

Rated speed rpm : 2500

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever

position degree : 13.0

tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 335

rack travel mm : 5.20

SET IDLE AUXILIARY SPRING

Rated speed rpm : 400

rack travel mm : 4.00

Tolerance mm : \pm 0.10

rack travel mm : 2.50

Rated speed rpm : 600

Tolerance 1/min : \pm 50

Load pick-up

Rated speed rpm : 250

CRT mm min. : $>$ 7.50

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 5.20

Rated speed rpm : 335

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 12.85

Tolerance mm : \pm 0.05

Rated speed rpm : 1400

rack travel mm : 12.35

Tolerance mm : \pm 0.15

Rated speed rpm : 1900

rack travel mm : 11.55

Tolerance mm : \pm 0.15

ADJUST NEGATIVE TORQUE CONTROLL

Rated speed rpm : 500
rack travel mm : 12.15
Tolerance mm : \pm 0.15

Rated speed rpm : 800
rack travel mm : 12.55
Tolerance mm : \pm 0.15

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 950
rack travel mm : -0.10
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -2.00
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1400
Del. quantity
cm3/1000 strokes : 40.8
Tolerance
cm3/1000 strokes : \pm 0.8
Check tolerance
cm3/1000S. : \pm 1.8
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1900
Spreed

Del. quantity
cm3/1000 strokes : 41.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 2.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

ADJUST NEGATIVE TORQUE CONTROLL

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 36.3
Tolerance
cm3/1000 strokes : \pm 0.8
Check tolerance
cm3/1000S. : \pm 1.8
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 39.3
Tolerance
cm3/1000 strokes : \pm 0.8
Check tolerance
cm3/1000S. : \pm 1.8
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

HIGH IDLE

Rated speed rpm : 2100
rack travel mm : 7.25
Tolerance mm : \pm 0.25
Del. quantity
cm3/1000 strokes : 25.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 3.0
Spreed

Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm³/1000 strokes : 52.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 335
rack travel mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : \pm 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 13.0
tolerance degree : \pm 2.0
Rated speed rpm : 360

Rack travel in mm : 13.00
Tolerance mm : \pm 0.70

Current A : 1.80

control lever
position degree : 50.0
Rated speed rpm : 2500

Rack travel in mm : 0.50
Tolerance mm : \pm 0.50

Current short-
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.09.94
Test oil : ISO 4113

Combination No. : 0400074893T8

Injection pump
Pump designation : PES4M55C320RS167
EP type number :

Governor
Governor design. : RSF360/2000M70-6
Governor no. :

Cust. part No. : T8

Customer spec. information

Customer : MB-NFZ
Motor : OM601-D23 A,S,CH
Power KW : 60.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

L04

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 15.5
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 41.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed	
Tolerance	
cm3/1000 strokes :	2.5
Check tolerance	
cm3/1000S. :	3.0
2nd speed rpm :	335
Rack travel in mm :	5.20
Tolerance mm :	+ 0.10
Del. quantity	
cm3/1000 strokes :	6.5
Tolerance	
cm3/1000 strokes :	+ 0.5
Speed	
Tolerance	
cm3/1000 strokes :	1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm :	6.25
Tolerance mm :	+ 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1000
Ref. pressure	
ALDA / ADA hPa :	1100
Del. quantity	
cm3/1000 strokes :	41.5
Tolerance	
cm3/1000 strokes :	+ 0.5
Check tolerance	
cm3/1000S. :	+ 1.5
Speed	
Tolerance	
cm3/1000 strokes :	2.5
Check tolerance	
cm3/1000S. :	3.0

RATED SPEED

control lever	
position degree :	50.0
rack travel mm :	7.25
Rated speed rpm :	2200

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	2500

SET IDLE CONTROL LEVER POSITION

Rated speed rpm :	1000
CRT mm max. :	1.45

LOW IDLE

control lever	
position degree :	13.0
tolerance degree :	+ 2.0

Setting point w/out bumper spring	
Rated speed rpm :	335
rack travel mm :	5.20

SET IDLE AUXILIARY SPRING

Rated speed rpm :	400
rack travel mm :	4.00
Tolerance mm :	+ 0.10

rack travel mm :	2.50
Rated speed rpm :	600
Tolerance 1/min :	+ 50

Load pick-up

Rated speed rpm :	250
CRT mm min. :	> 7.50

Rated speed rpm :	1000
CRT mm max. :	1.45

rack travel mm :	5.20
Rated speed rpm :	335

TORQUE CONTROL

Rated speed rpm :	1000
rack travel mm :	12.85
Tolerance mm :	+ 0.05

Rated speed rpm :	1400
rack travel mm :	12.35
Tolerance mm :	+ 0.15

Rated speed rpm :	2000
rack travel mm :	11.55

Tolerance mm : \pm 0.15

ADJUST NEGATIVE TORQUE CONTROLL

Rated speed rpm : 500
rack travel mm : 12.15
Tolerance mm : \pm 0.15

Rated speed rpm : 800
rack travel mm : 12.55
Tolerance mm : \pm 0.15

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 950
rack travel mm : -0.10
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -2.00
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1400
Del. quantity
cm³/1000 strokes : 40.8
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2000

Spreed
Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

ADJUST NEGATIVE TORQUE CONTROLL

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 36.3
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 39.3
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

HIGH IDLE

Rated speed rpm : 2200
rack travel mm : 7.25
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed

Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm3/1000 strokes : 52.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 335
rack travel mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 7.8
Check tolerance
cm3/1000S. : \pm 2.3
Spreed
Check tolerance
cm3/1000S. : 1.5

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 13.0
tolerance degree : \pm 2.0
Rated speed rpm : 360

Rack travel in mm : 13.00
Tolerance mm : \pm 0.70

Current A : 1.80

control lever
position degree : 50.0
Rated speed rpm : 2500

Rack travel in mm : 0.50
Tolerance mm : \pm 0.50

Current short-
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.09.94
Test oil : ISO 4113

Combination No. : 0400074894T8

Injection pump
Pump designation : PES4M55C320RS167
EP type number :

Governor
Governor design. : RSF375/1900M69-6
Governor no. :

Cust. part No. : T 8

Customer-spec. information

Customer : MB-NFZ
Motor : OM601-D23 A,S,CH
Power KW : 58.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test Lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

L08

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 15.5
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 41.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Spreed	
Tolerance	
cm3/1000 strokes	: 2.5
Check tolerance	
cm3/1000S.	: 3.0
2nd speed rpm	: 375
Rack travel in mm	: 5.10
Tolerance mm	: + 0.10
Del. quantity	
cm3/1000 strokes	: 6.5
Tolerance	
cm3/1000 strokes	: + 0.5
Spreed	
Tolerance	
cm3/1000 strokes	: 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm	: 6.25
Tolerance mm	: + 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
Ref. pressure	
ALDA / ADA hPa	: 1100
Del. quantity	
cm3/1000 strokes	: 41.5
Tolerance	
cm3/1000 strokes	: + 0.5
Check tolerance	
cm3/1000S.	: + 1.5
Spreed	
Tolerance	
cm3/1000 strokes	: 2.5
Check tolerance	
cm3/1000S.	: 3.0

RATED SPEED

control lever	
position degree	: 50.0
rack travel mm	: 7.25
Rated speed rpm	: 2100

rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 2500

SET IDLE CONTROL LEVER POSITION

Rated speed rpm	: 1000
CRT mm max.	: 1.45

LOW IDLE

control lever	
position degree	: 13.0
tolerance degree	: + 2.0

Setting point w/out bumper spring	
Rated speed rpm	: 375
rack travel mm	: 5.10

SET IDLE AUXILIARY SPRING

Rated speed rpm	: 420
rack travel mm	: 4.00
Tolerance mm	: + 0.10

rack travel mm	: 3.00
Rated speed rpm	: 500
Tolerance 1/min	: + 50

Load pick-up

Rated speed rpm	: 250
CRT mm min.	: > 10.20
Rated speed rpm	: 1000
CRT mm max.	: 1.45
rack travel mm	: 5.10
Rated speed rpm	: 375

TORQUE CONTROL

Rated speed rpm	: 1000
rack travel mm	: 12.85
Tolerance mm	: + 0.05

Rated speed rpm	: 1400
rack travel mm	: 12.35
Tolerance mm	: + 0.15

Rated speed rpm	: 1900
rack travel mm	: 11.55

Tolerance mm : \pm 0.15

ADJUST NEGATIVE TORQUE CONTROLL

Rated speed rpm : 500
rack travel mm : 12.15
Tolerance mm : \pm 0.15

Rated speed rpm : 800
rack travel mm : 12.55
Tolerance mm : \pm 0.15

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 950
rack travel mm : -0.20

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -2.00
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1400
Del. quantity
cm³/1000 strokes : 40.8
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1900
Spreed

Del. quantity
cm³/1000 strokes : 40.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 39.3
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

ADJUST NEGATIVE TORQUE CONTROLL

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 36.3
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

HIGH IDLE

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2100
rack travel mm : 7.25
Tolerance mm : \pm 0.25

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10

Del. quantity
cm³/1000 strokes : 52.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 375
rack travel mm : 5.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : ± 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

SETTING PNEUMATIC FAST IDLE (ELA) (PLA) POSITION

Rated speed rpm : 425
Rack travel in mm : 7.40
Tolerance mm : ± 0.80
Vacuum hPa : 400.0
Vacuum hPa : 400

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 13.0
tolerance degree : ± 2.0

control lever
position degree : 50.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.09.94
Test oil : ISO 4113

Combination No. : 0400074897T8

Injection pump
Pump designation : PES4M55C320RS172
EP type number :

Governor
Governor design. : RSF360/2300M60-25
Governor no. :

Cust. part No. : T8

Customer-spec. information
Customer : MB-PKW
Motor : OM601-AbgL. MJ90
Power KW : 53.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test Lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 1.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 17.0
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 33.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

2nd speed rpm : 335

Rack travel in mm : 6.50

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 6.5

Tolerance

cm³/1000 strokes : ± 0.5

Speed

Tolerance

cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.50

Tolerance mm : ± 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure

ALDA / ADA hPa : 1100

Del. quantity

cm³/1000 strokes : 33.5

Tolerance

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000S. : ± 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

RATED SPEED

control lever

position degree : 50.0

rack travel mm : 8.40

Rated speed rpm : 2500

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever

position degree : 14.0

tolerance degree : ± 2.0

Setting point w/out bumper spring

Rated speed rpm : 335

rack travel mm : 6.50

SET IDLE AUXILIARY SPRING

Rated speed rpm : 400

rack travel mm : 5.30

Tolerance mm : ± 0.10

rack travel mm : 2.50

Rated speed rpm : 680

Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 250

CRT mm min. : > 9.00

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 6.60

Rated speed rpm : 335

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 12.35

Tolerance mm : ± 0.05

Rated speed rpm : 1800

rack travel mm : 11.80

Tolerance mm : ± 0.10

Rated speed rpm : 2200

rack travel mm : 11.20

Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 950
rack travel mm : -0.10
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -2.00
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1800
Del. quantity
cm³/1000 strokes : 34.8
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2200
Spreed
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

HIGH IDLE

Rated speed rpm : 2500
rack travel mm : 8.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 1000
rack travel mm : 20.10
Del. quantity
cm³/1000 strokes : 52.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 335
rack travel mm : 6.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : \pm 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 49.00
degree : < 46.50

SETTING/TESTING ELECTRONIC IDLE
REGULATION (ELR)

control lever
position degree : 14.0
tolerance degree : \pm 2.0
Rated speed rpm : 360

Rack travel in mm : 13.70
Tolerance mm : \pm 0.70

Current A : 1.80

control lever
position degree : 50.0
Rated speed rpm : 2950

Rack travel in mm : 0.50
Tolerance mm : \pm 0.50

Current short-
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.09.94
Test oil : ISO 4113

Combination No. : 0400074899T8

Injection pump
Pump designation : PES4M55C320RS167
EP type number :

Governor
Governor design. : RSF375/1700M69-4
Governor no. :

Cust. part No. : T8

Customer-spec. information
Customer : MB-NFZ
Motor : OM601-2.3L
Power KW : 49.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 15.5
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 37.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Spreed	
Tolerance	
cm3/1000 strokes :	2.5
Check tolerance	
cm3/1000S. :	3.0
2nd speed rpm :	375
Rack travel in mm :	5.60
Tolerance mm :	+ 0.10
Del. quantity	
cm3/1000 strokes :	6.5
Tolerance	
cm3/1000 strokes :	+ 0.5
Spreed	
Tolerance	
cm3/1000 strokes :	1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm :	6.25
Tolerance mm :	+ 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1000
Ref. pressure	
ALDA / ADA hPa :	1100
Del. quantity	
cm3/1000 strokes :	37.5
Tolerance	
cm3/1000 strokes :	+ 0.5
Check tolerance	
cm3/1000S. :	+ 1.5
Spreed	
Tolerance	
cm3/1000 strokes :	2.5
Check tolerance	
cm3/1000S. :	3.0

RATED SPEED

control lever	
position degree :	50.0
rack travel mm :	9.25
Rated speed rpm :	1800

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	2300

SET IDLE CONTROL LEVER POSITION

Rated speed rpm :	1000
CRT mm max. :	1.45

LOW IDLE

control lever	
position degree :	14.0
tolerance degree :	+ 2.0

Setting point w/out bumper spring	
Rated speed rpm :	375
rack travel mm :	5.60

SET IDLE AUXILIARY SPRING

Rated speed rpm :	420
rack travel mm :	4.50
Tolerance mm :	+ 0.10

rack travel mm :	3.00
Rated speed rpm :	630
Tolerance 1/min :	+ 50

Load pick-up

Rated speed rpm :	250
CRT mm min. :	> 10.20
Rated speed rpm :	1000
CRT mm max. :	1.45
rack travel mm :	5.60
Rated speed rpm :	375

TORQUE CONTROL

Rated speed rpm :	1000
rack travel mm :	12.35
Tolerance mm :	+ 0.05

Rated speed rpm :	1400
rack travel mm :	11.85
Tolerance mm :	+ 0.15

Rated speed rpm :	1650
rack travel mm :	11.55

Tolerance mm : \pm 0.15

ADJUST NEGATIVE TORQUE CONTROLL

Rated speed rpm : 500
rack travel mm : 11.75
Tolerance mm : \pm 0.15

Rated speed rpm : 800
rack travel mm : 12.15
Tolerance mm : \pm 0.15

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 950
rack travel mm : -0.10
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -2.00
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1400
Del. quantity
cm³/1000 strokes : 37.3
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8

Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1650

Spreed
Del. quantity
cm³/1000 strokes : 38.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

ADJUST NEGATIVE TORQUE CONTROLL

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 33.3
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 35.8
Tolerance
cm³/1000 strokes : \pm 0.8
Check tolerance
cm³/1000S. : \pm 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

INTERMEDIATE RATED SPEED

rack travel mm : 7.95
Rated speed rpm : 1000

HIGH IDLE

Rated speed rpm : 1800
rack travel mm : 9.25
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 31.0

Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 3.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm3/1000 strokes : 52.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 375
rack travel mm : 5.60
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 7.8
Check tolerance
cm3/1000S. : + 2.3
Spreed
Check tolerance
cm3/1000S. : 1.5

SETTING PNEUMATIC FAST IDLE (ELA) (PLA) POSITION

control lever
position degree : VWL
Rated speed rpm : 425

Rack travel in mm : 7.80
Tolerance mm : + 0.80
Vacuum hPa : 400.0
Vacuum hPa : 400

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 14.0
tolerance degree : + 2.0

control lever
position degree : 50.0

Adjustment of the control-rod travel sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.09.94
Test oil : ISO 4113

Combination No. : 0400074903T8

Injection pump
Pump designation : PES4M55C320RS169
EP type number :

Governor
Governor design. : RSF360/2300M60-9
Governor no. :

Cust. part No. : T8

Customer-spec. information
Customer : MB-PKW
Motor : OM601-ECE
Power KW : 53.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

L20

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

*NW after s.o.d. : 19.5
Tolerance : ± 0.20
Check
tolerance *NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 33.5

Tolerance
cm3/1000 strokes : ± 0.5

Check tolerance
cm3/1000s. : ± 1.5

Spreed	
Tolerance	
cm3/1000 strokes	: 2.5
Check tolerance	
cm3/1000S.	: 3.0
2nd speed rpm	: 335
Rack travel in mm	: 6.40
Tolerance mm	: + 0.10
Del. quantity	
cm3/1000 strokes	: 6.5
Tolerance	
cm3/1000 strokes	: + 0.5
Spreed	
Tolerance	
cm3/1000 strokes	: 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm	: 6.50
Tolerance mm	: + 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
Ref. pressure	
ALDA / ADA hPa	: 1100
Del. quantity	
cm3/1000 strokes	: 33.5
Tolerance	
cm3/1000 strokes	: + 0.5
Check tolerance	
cm3/1000S.	: + 1.5
Spreed	
Tolerance	
cm3/1000 strokes	: 2.5
Check tolerance	
cm3/1000S.	: 3.0

RATED SPEED

control lever	
position degree	: 50.0
rack travel mm	: 8.70
Rated speed rpm	: 2500

rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm	: 1000
CRT mm max.	: < 1.25

LOW IDLE

control lever	
position degree	: 14.0
tolerance degree	: + 2.0

Setting point w/out bumper spring	
Rated speed rpm	: 335
rack travel mm	: 6.40

SET IDLE AUXILIARY SPRING

Rated speed rpm	: 400
rack travel mm	: 5.00
Tolerance mm	: + 0.10

rack travel mm	: 2.00
Rated speed rpm	: 660
Tolerance 1/min	: + 50

Load pick-up

Rated speed rpm	: 225
CRT mm min.	: > 9.00

Rated speed rpm	: 1000
CRT mm max.	: < 1.25

rack travel mm	: 6.40
Rated speed rpm	: 335

TORQUE CONTROL

Rated speed rpm	: 1000
rack travel mm	: 12.35
Tolerance mm	: + 0.05

Rated speed rpm	: 1800
rack travel mm	: 11.80
Tolerance mm	: + 0.10

Rated speed rpm	: 2200
rack travel mm	: 11.50

Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 950
rack travel mm : -0.10
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -2.00
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1800
Del. quantity
cm3/1000 strokes : 33.8
Tolerance
cm3/1000 strokes : \pm 0.8
Check tolerance
cm3/1000S. : \pm 1.8
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2200
Spreed
Del. quantity
cm3/1000 strokes : 35.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 2.0
Spreed
Tolerance
cm3/1000 strokes : 2.5

Check tolerance
cm3/1000S. : 3.0

HIGH IDLE

Rated speed rpm : 2500
rack travel mm : 8.70
Tolerance mm : \pm 0.20
Del. quantity
cm3/1000 strokes : 24.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 3.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 1000
rack travel mm : 20.10
Del. quantity
cm3/1000 strokes : 52.0
Spreed
Tolerance
cm3/1000 strokes : 6.0

LOW IDLE

Rated speed rpm : 335
rack travel mm : 6.40
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 7.8
Check tolerance
cm3/1000S. : \pm 2.3
Spreed
Check tolerance
cm3/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : $>$ 49.00
degree : $<$ 46.50

SETTING/TESTING ELECTRONIC IDLE
REGULATION (ELR)

control lever
position degree : 14.0
tolerance degree : \pm 2.0
Rated speed rpm : 360

Rack travel in mm : 13.30
Tolerance mm : \pm 0.70
Del. quantity
cm³/1000 strokes : 34.0
Tolerance
cm³/1000 strokes : \pm 3.0

Current A : 1.80

control lever
position degree : 50.0
Rated speed rpm : 2950

Rack travel in mm : 0.50
Tolerance mm : \pm 0.50

Current short-
duration A : 3.00

Starting test

Rated speed rpm : 100
Current A : 1.80

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.09.94
Test oil : ISO 4113

Combination No. : 0400074907T8

Injection pump
Pump designation : PES4M55C32ORS167
EP type number :

Governor
Governor design. : RSF360/2000M70
Governor no. :

Cust. part No. : T8

Customer-spec. information

Customer : MB-NFZ
Motor : OM601-2.3L
Power KW : 60.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test Lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

L24

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 15.5
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 41.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000s. : ± 1.5

Spreed	
Tolerance	
cm3/1000 strokes :	2.5
Check tolerance	
cm3/1000S. :	3.0
2nd speed rpm :	335
Rack travel in mm :	5.20
Tolerance mm :	+ 0.10
Del. quantity	
cm3/1000 strokes :	6.5
Tolerance	
cm3/1000 strokes :	+ 0.5
Spreed	
Tolerance	
cm3/1000 strokes :	1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm :	6.25
Tolerance mm :	+ 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1000
Ref. pressure	
ALDA / ADA hPa :	1100
Del. quantity	
cm3/1000 strokes :	41.5
Tolerance	
cm3/1000 strokes :	+ 0.5
Check tolerance	
cm3/1000S. :	+ 1.5
Spreed	
Tolerance	
cm3/1000 strokes :	2.5
Check tolerance	
cm3/1000S. :	3.0

RATED SPEED

control lever	
position degree :	50.0
rack travel mm :	7.25
Rated speed rpm :	2200

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	2500

SET IDLE CONTROL LEVER POSITION

Rated speed rpm :	1000
CRT mm max. :	1.45

LOW IDLE

control lever	
position degree :	13.0
tolerance degree :	+ 2.0

Setting point w/out bumper spring

Rated speed rpm :	335
rack travel mm :	5.20

SET IDLE AUXILIARY SPRING

Rated speed rpm :	400
rack travel mm :	4.00
Tolerance mm :	+ 0.10

rack travel mm :	2.50
Rated speed rpm :	600
Tolerance 1/min :	+ 50

Load pick-up

Rated speed rpm :	250
CRT mm min. :	> 7.50

Rated speed rpm :	1000
CRT mm max. :	1.45

rack travel mm :	5.20
Rated speed rpm :	335

TORQUE CONTROL

Rated speed rpm :	1000
rack travel mm :	12.85
Tolerance mm :	+ 0.05

Rated speed rpm :	1400
rack travel mm :	12.35
Tolerance mm :	+ 0.15

Rated speed rpm :	2000
rack travel mm :	11.55

Tolerance mm : + 0.15

ADJUST NEGATIVE TORQUE CONTROLL

Rated speed rpm : 500
rack travel mm : 12.15
Tolerance mm : + 0.15

Rated speed rpm : 800
rack travel mm : 12.55
Tolerance mm : + 0.15

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 950
rack travel mm : -0.10
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.60
Tolerance mm : + 0.10

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -2.00
Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1400
Del. quantity
cm3/1000 strokes : 40.8
Tolerance
cm3/1000 strokes : + 0.8
Check tolerance
cm3/1000S. : + 1.8

Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2000

Speed
Del. quantity
cm3/1000 strokes : 41.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 2.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

ADJUST NEGATIVE TORQUE CONTROLL

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 36.3
Tolerance
cm3/1000 strokes : + 0.8
Check tolerance
cm3/1000S. : + 1.8
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 39.3
Tolerance
cm3/1000 strokes : + 0.8
Check tolerance
cm3/1000S. : + 1.8
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

HIGH IDLE

Rated speed rpm : 2200
rack travel mm : 7.25
Tolerance mm : + 0.25
Del. quantity
cm3/1000 strokes : 25.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 3.0
Spreed

Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm3/1000 strokes : 52.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 335
rack travel mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 7.8
Check tolerance
cm3/1000S. : \pm 2.3
Spreed
Check tolerance
cm3/1000S. : 1.5

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 13.0
tolerance degree : \pm 2.0
Rated speed rpm : 360

Rack travel in mm : 13.00
Tolerance mm : \pm 0.70
Del. quantity
cm3/1000 strokes : 38.0
Tolerance
cm3/1000 strokes : \pm 4.0

Current A : 1.80

control lever
position degree : 0.0
Rated speed rpm : 2500

Rack travel in mm : 0.50
Tolerance mm : \pm 0.50

Current short-
duration A : 3.00

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.09.94
Test oil : ISO 4113

Combination No. : 0400075009T8

Injection pump
Pump designation : PES5M55C320RS176
EP type number :

Governor
Governor design. : RSV350...1650MOC353
: -6
Governor no. :

Cust. part No. : T8

Customer spec. information

Customer : MB-NFZ
Motor : OM602 (2,9L)
Power KW : 62.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

L28

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

*NW after s.o.d. : 15.5
Tolerance : ± 0.20
Check
tolerance *NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1630

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 40.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

2nd speed rpm : 350

Del. quantity

cm³/1000 strokes : 7.0

Tolerance

cm³/1000 strokes : ± 1.0

Speed

Tolerance

cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : ± 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1630

Del. quantity

cm³/1000 strokes : 40.5

Tolerance

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000S. : ± 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

RATED SPEED

control lever

position degree : 113.0

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 2000

LOW IDLE

M01

control lever

position degree : 76.0

tolerance degree : ± 4.0

Load pick-up

Rated speed rpm : 100

CRT mm min. : > 20.10

rack travel mm : 5.40

Rated speed rpm : 350

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1630

rack travel mm : 12.15

Tolerance mm : ± 0.05

Rated speed rpm : 1000

rack travel mm : 5.00

Tolerance mm : ± 0.10

Rated speed rpm : 1400

rack travel mm : 12.60

Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1000

Del. quantity

cm³/1000 strokes : 41.8

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 2.0

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

Rated speed rpm : 1400

Speed

Del. quantity

cm³/1000 strokes : 41.0

Tolerance

cm³/1000 strokes : ± 0.8

Check tolerance
cm³/1000S. : + 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm³/1000 strokes : 52.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 5.40
Tolerance mm : + 0.10

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 76.0
tolerance degree : + 4.0

control lever
position degree : 113.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 113.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.09.94
Test oil : ISO 4113

Combination No. : 0400075013T8

Injection pump
Pump designation : PES5M55C320RS176
EP type number :

Governor
Governor design. : RSV400...1800MOC355
Governor no. :

Cust. part No. : T8

Customer-spec. information

Customer : MB-NFZ
Motor : OM602 D 29
Power KW : 67.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1688901111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

M03

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

*NW after s.o.d. : 15.5
Tolerance : ± 0.20
Check
tolerance *NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1800

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 41.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000s. : ± 1.5

Spreed	
Tolerance	
cm3/1000 strokes :	2.5
Check tolerance	
cm3/1000S. :	3.0
2nd speed rpm	
Del. quantity	400
cm3/1000 strokes :	8.0
Tolerance	
cm3/1000 strokes : +	1.0
Spreed	
Tolerance	
cm3/1000 strokes :	1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
Rack travel in mm :	0.65
Tolerance mm :	+ 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1800
Del. quantity	
cm3/1000 strokes :	41.5
Tolerance	
cm3/1000 strokes : +	0.5
Check tolerance	
cm3/1000S. :	+ 1.5
Spreed	
Tolerance	
cm3/1000 strokes :	2.5
Check tolerance	
cm3/1000S. :	3.0

RATED SPEED

control lever	
position degree :	87.0
rack travel mm	
Tolerance 1/min :	+ 5
Rated speed rpm :	1845
rack travel mm	
Rated speed rpm :	1930
Tolerance 1/min :	+ 10

rack travel mm :	1.00
Tolerance mm :	+ 0.70
Rated speed rpm :	2250

LOW IDLE

control lever	
position degree :	59.0
tolerance degree :	+ 4.0

Load pick-up

Rated speed rpm :	100
CRT mm min. :	> 20.10
rack travel mm :	5.40
Rated speed rpm :	400

SET IDLE AUXILIARY SPRING

rack travel mm :	2.00
------------------	------

TORQUE CONTROL

Rated speed rpm :	1800
rack travel mm :	11.85
Tolerance mm :	+ 0.05
Rated speed rpm	
Rated speed rpm :	1000
rack travel mm :	12.50
Tolerance mm :	+ 0.10
Rated speed rpm	
Rated speed rpm :	1400
rack travel mm :	12.30
Tolerance mm :	+ 0.10

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm :	1000
Del. quantity	
cm3/1000 strokes :	40.3
Tolerance	
cm3/1000 strokes : +	1.0
Check tolerance	
cm3/1000S. :	+ 2.0
Spreed	
Tolerance	
cm3/1000 strokes :	2.5
Check tolerance	
cm3/1000S. :	3.0

Rated speed rpm : 1400
Spreed
Del. quantity
cm3/1000 strokes : 41.0
Tolerance
cm3/1000 strokes : +- 0.8
Check tolerance
cm3/1000S. : +- 1.8
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

BREAKAWAY

Full load CRT mm : 10.80
Rated speed rpm : 1845
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm3/1000 strokes : 52.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 5.40
Tolerance mm : +- 0.10

SETTING/TESTING ELECTRONIC IDLE
REGULATION (ELR)

control lever
position degree : 59.0
tolerance degree : +- 4.0

control lever
position degree : 87.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 87.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.09.94

Test oil : ISO 4113

Combination No. : 0400864066

Injection pump

Pump designation : PES4A80D410/3RS2717

EP type number : 0410884045

Governor

Governer design. : RSV325...900A1C602

: -5L

Governer no. : 0420232605

Cust. part No. :

Customer-spec. information

Customer : KHD

Motor : F4L913

Power KW : 43.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly

: 0681343009

Opening pressure
bar

: 173.5

Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.15

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance : ± 0.50

Check
tolerance °NW : ± 0.75

BASIC SETTING

Del. quantity

cm³/1000 strokes : 50.0

Tolerance

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000S. : ± 2.0

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 880
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : + 0.5
Check tolerance
cm³/1000S. : + 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0

RATED SPEED

control lever
position degree : 98.0
tolerance degree : + 4.0

rack travel mm : 9.20
Rated speed rpm : 925
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 960
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1110

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 7.90
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 380
Tolerance 1/min : + 30

SET IDLE AUXILIARY SPRING

Rated speed rpm : 30

BREAKAWAY

Rack travel in mm : 1.20
Rated speed rpm : 925
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.09.94
Test oil : ISO 4113

Combination No. : 0402648883

Injection pump
Pump designation : PE8P120A920/4LS7125
EP type number : 0412628833

Governor
Governor design. : RQV300...900PA795
: -11
Governor no. : 0421813847

Cust. part No. : 1305129

Customer-spec. information
Customer : SCANIA
Motor : DS14 48M

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.55
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 215.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 4.80
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.56
Tolerance mm : \pm 0.15

Rated speed rpm : 960
guide sleeve
travel mm : 8.18
Tolerance mm : \pm 0.20

Rated speed rpm : 688
guide sleeve
travel mm : 5.27
Tolerance mm : \pm 0.25

Rated speed rpm : 345

guide sleeve
travel mm : 2.04
Tolerance mm : \pm 0.25

Rated speed rpm : 395
guide sleeve
travel mm : 2.62
Tolerance mm : \pm 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 3.12
Tolerance mm : \pm 0.25

Rated speed rpm : 1190
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1035

Rack travel in mm : 2.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 47.0
tolerance degree : \pm 4.0

control lever
position degree : 105.0
tolerance degree : \pm 4.0

rack travel mm : 12.50
Rated speed rpm : 945

Tolerance 1/min : + 5
rack travel mm : 4.00
Rated speed rpm : 1040
Tolerance 1/min : + 15
rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + 4.0

control lever
position degree : 15.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.80
Tolerance mm : + 0.10

Rated speed rpm : 175

CRT mm min. : > 6.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 13.55
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.55
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 11.35

M10

Tolerance mm : + 0.20
Rated speed rpm : 500
Pressure hPa : 215
rack travel mm : 12.00
Tolerance mm : + 0.15
Pressure hPa : 365
rack travel mm : 12.85
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 209.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 6.0

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 12.50
Rated speed rpm : 945
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 300

rack travel mm : 4.80
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.05.86
Test oil : ISO 4113

Combination No. : 0400075974

Injection pump
Pump designation : PES5M55C320RS162
EP type number : 0410055983

Governor
Governor design. : RSF340/2300M60-5
Governor no. : 0420021063

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM602-LVP MJ:86
Power KW : 66.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 1.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0- 1- 144-216-288
Check
tolerance °NW : ± 1.00

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 31.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

Rack travel in mm : 4.00

Tolerance mm : \pm 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 31.5
Tolerance
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 1.5
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

rack travel mm : 7.10
Rated speed rpm : 2500

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : $<$ 2.00

LOW IDLE

control lever
position degree : 15.0
tolerance degree : \pm 2.0

Setting point w/out bumper spring
Rated speed rpm : 380
rack travel mm : 4.00

SET IDLE AUXILIARY SPRING

Rated speed rpm : 315
rack travel mm : 5.30
Tolerance mm : \pm 0.10

rack travel mm : 2.50
Rated speed rpm : 580
Tolerance 1/min : \pm 50

Load pick-up

Rated speed rpm : 220

CRT mm min. : $>$ 7.50

Rated speed rpm : 1000

CRT mm max. : $<$ 2.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1600
rack travel mm : 11.00
Tolerance mm : \pm 0.10

Rated speed rpm : 2500
rack travel mm : 10.40
Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 930
rack travel mm : 0.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 840
rack travel mm : 1.20
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 700
rack travel mm : 2.50
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1600
Del. quantity
cm3/1000 strokes : 34.8
Tolerance
cm3/1000 strokes : ± 0.8
Check tolerance
cm3/1000S. : ± 1.8
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

Rated speed rpm : 2250
Spreed
Del. quantity
cm3/1000 strokes : 33.0
Tolerance
cm3/1000 strokes : ± 1.0
Check tolerance
cm3/1000S. : ± 2.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

INTERMEDIATE RATED SPEED

rack travel mm : 7.10
Rated speed rpm : 1000

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm3/1000 strokes : 55.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 15.0
tolerance degree : ± 2.0

control lever
position degree : 50.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.10.94
Test oil : ISO 4113
Combination No. : 0402035031
Injection pump
Pump designation : PES5P120A720/3LS528
: -1
EP type number : 0412025023
Governor
Governor design. : RQ325/950PA813-18
Governor no. : 0421801563
Cust. part No. : 51.11103-7346

Customer-spec. information

Customer : MAN
Motor : D2865LF04 / LU04
Power KW : 198.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.50
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 5

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 222.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 2.08
Tolerance mm : + 0.10

Rated speed rpm : 1008
guide sleeve
travel mm : 6.57
Tolerance mm : + 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.20
Tolerance mm : + 0.10

Rated speed rpm : 783
guide sleeve
travel mm : 6.05
Tolerance mm : + 0.10

Rated speed rpm : 394
guide sleeve
travel mm : 3.83
Tolerance mm : + 0.10

Rated speed rpm : 510
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1150
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

Rated speed rpm : 814
guide sleeve
travel mm : 6.15
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 222.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Spread
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

RATED SPEED

rack travel mm : 11.10
Rated speed rpm : 1053
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1055
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 252.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : + 20

Rated speed rpm : 100

CRT mm min. : > 6.00

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.15
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 12.15
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 12.15
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.15
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.00
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 440
rack travel mm : 11.35
Tolerance mm : ± 0.15

Pressure hPa : 150
rack travel mm : 9.35
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 245
Check
speed 1/min : < 265

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000

M17

Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 228.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 4.0

BREAKAWAY

Rack travel in mm : 11.10
Rated speed rpm : 1003
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000s. : ± 14.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.10.94
Test oil : ISO 4113

Combination No. : 0402035032

Injection pump
Pump designation : PES5P120A720/3LS528
: -1
EP type number : 0412025023

Governor
Governor design. : RQV325...1000PA876
: -10
Governor no. : 0421813900

Cust. part No. : 51.11103-7348

Customer-spec. information
Customer : MAN
Motor : D2865LF/LU05
Power KW : 198.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 130
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

M18

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.50
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 5

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.65
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 221.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 325

Rack travel in mm : 4.50
Tolerance mm : \pm 0.20

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 0.96
Tolerance mm : \pm 0.25

Rated speed rpm : 1057
guide sleeve
travel mm : 9.86
Tolerance mm : \pm 0.25

Rated speed rpm : 809
guide sleeve
travel mm : 6.82
Tolerance mm : \pm 0.25

Rated speed rpm : 380
guide sleeve
travel mm : 1.82
Tolerance mm : \pm 0.25

Rated speed rpm : 430
guide sleeve
travel mm : 2.54
Tolerance mm : \pm 0.25

Rated speed rpm : 540

guide sleeve
travel mm : 3.64
Tolerance mm : \pm 0.25

Rated speed rpm : 1290
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1080

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 300.0
tolerance degree : \pm 4.0

rack travel mm : 10.60
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1115
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 256.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : $>$ 6.10

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 11.65
Tolerance mm : \pm 0.10

Rated speed rpm : 550
rack travel mm : 11.65
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 11.65
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.10
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 390
rack travel mm : 11.05
Tolerance mm : \pm 0.15

Pressure hPa : 150
rack travel mm : 9.45
Tolerance mm : \pm 0.05

M20

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 245
Check
speed 1/min : $<$ 265

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 213.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.60
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 10.0

Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : \pm 0.20

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.10.94
Test oil : ISO 4113

Combination No. : 0402035033

Injection pump
Pump designation : PES5P120A720/3LS528
: -1
EP type number : 0412025023

Governor
Governor design. : RQ325/1000PA813-20
Governor no. : 0421801567

Cust. part No. : 51.11103-7347

Customer-spec. information
Customer : MAN
Motor : D2865LF/LU05
Power KW : 198.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 125
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

M22

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 1.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.50
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 5

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.65
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 221.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 325

Rack travel in mm : 4.50
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 221.0
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

rack travel mm : 10.60
Rated speed rpm : 1053
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1135
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 253.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 380
Tolerance 1/min : \pm 20

Rated speed rpm : 100

CRT mm min. : $>$ 6.00

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 11.65
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.10
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 390
rack travel mm : 11.05
Tolerance mm : \pm 0.15

Pressure hPa : 150
rack travel mm : 9.45
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 245
Check
speed 1/min : $<$ 265

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 213.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

M24

Rack travel in mm : 10.60
Rated speed rpm : 1053
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.10.94
Test oil : ISO 4113

Combination No. : 0402036756

Injection pump
Pump designation : PES6P120A720/3LS3255
: -3
EP type number : 0412026774

Governor
Governor design. : RQ300/1000PA813-19
Governor no. : 0421801561

Cust. part No. : 51.11103-7316

Customer-spec. information
Customer : MAN
Motor : D2866LF05
Power KW : 272.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 15.00
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 6.20
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 50.0

<hr/>	
Tolerance	
cm ³ /1000 strokes	: + 3.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: + 6.0
<hr/>	
Speed	
<hr/>	
Tolerance	
cm ³ /1000 strokes	: 3.5
Check tolerance	
cm ³ /1000S.	: 8.0
Rated speed rpm	: 700
<hr/>	
Rack travel in mm	: 15.15
Tolerance mm	: + 0.05
<hr/>	
Del. quantity	
cm ³ /1000 strokes	: 245.0
<hr/>	
Tolerance	
cm ³ /1000 strokes	: + 1.0
Check tolerance	
cm ³ /1000S.	: + 4.0
<hr/>	
Speed	
Tolerance	
cm ³ /1000 strokes	: 8.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 12.0
2nd speed rpm	: 300
Rack travel in mm	: 5.00
Tolerance mm	: + 0.20
Del. quantity	
cm ³ /1000 strokes	: 20.0
Tolerance	
cm ³ /1000 strokes	: + 3.0
Check tolerance	
cm ³ /1000S.	: + 6.0
Speed	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve	
travel mm	: 1.79
Tolerance mm	: + 0.10
<hr/>	
Rated speed rpm	: 1059
guide sleeve	
travel mm	: 6.53
Tolerance mm	: + 0.10
<hr/>	
Rated speed rpm	: 1000
guide sleeve	
travel mm	: 6.20
Tolerance mm	: + 0.10
<hr/>	
Rated speed rpm	: 810
guide sleeve	
travel mm	: 6.05
Tolerance mm	: + 0.10
<hr/>	
Rated speed rpm	: 394
guide sleeve	
travel mm	: 4.07
Tolerance mm	: + 0.10
<hr/>	
Rated speed rpm	: 500
guide sleeve	
travel mm	: 5.00
Tolerance mm	: + 0.10
<hr/>	
Rated speed rpm	: 1240
guide sleeve	
travel mm	: 11.50
Tolerance mm	: + 0.50
<hr/>	
Rated speed rpm	: 840
guide sleeve	
travel mm	: 6.15
Tolerance mm	: + 0.10

GUIDE SLEEVE POSITION

Rated speed rpm	: 550
Rack travel in mm	: 20.00
Tolerance mm	: + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure	
hPa	: 1200
Del. quantity	
cm ³ /1000 strokes	: 245.0
Tolerance	
cm ³ /1000 strokes	: + 1.0
Check tolerance	
cm ³ /1000S.	: + 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

rack travel mm : 14.10
Rated speed rpm : 1053
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1170
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 254.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 380
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 6.50

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.15
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 15.15
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 8.00
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 15.15
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 12.10
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 470
rack travel mm : 14.20
Tolerance mm : + 0.20

Pressure hPa : 110
rack travel mm : 1.35
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : 1200

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 244.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Speed
Tolerance
cm³/1000 strokes : 10.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 139.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 14.10
Rated speed rpm : 1053
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.10.94
Test oil : ISO 4113

Combination No. : 0402036743

Injection pump
Pump designation : PES6P120A720/3LS3255
EP type number : 0412026739

Governor
Governor design. : RQ300/1000PA813-19
Governor no. : 0421801561

Cust. part No. : 3-7037

Customer-spec. information
Customer : MAN
Motor : D2866LF05
Power KW : 272.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 15.00
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 700

Del. quantity
cm³/1000 strokes : 50.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : + 6.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 700

Rack travel in mm : 15.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 300

Rack travel in mm : 5.00
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.79

NO2

Tolerance mm : + 0.10

Rated speed rpm : 1059
guide sleeve
travel mm : 6.53
Tolerance mm : + 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 6.20
Tolerance mm : + 0.10

Rated speed rpm : 810
guide sleeve
travel mm : 6.05
Tolerance mm : + 0.10

Rated speed rpm : 395
guide sleeve
travel mm : 4.13
Tolerance mm : + 0.10

Rated speed rpm : 500
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1.0
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

Rated speed rpm : 840
guide sleeve
travel mm : 6.15
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 550

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

RATED SPEED

rack travel mm : 14.10
Rated speed rpm : 1053
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1170
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 254.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 380
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 6.50

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.15
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 15.15
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 8.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 15.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 12.10
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 470
rack travel mm : 14.20
Tolerance mm : \pm 0.20

Pressure hPa : 110
rack travel mm : 12.35
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 220
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 244.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : +- 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 94.0
Tolerance
cm3/1000 strokes : +- 5.0
Check tolerance
cm3/1000S. : +- 8.0
Spreed
Tolerance
cm3/1000 strokes : 10.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 139.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 4.0

BREAKAWAY

Rack travel in mm : 14.10
Rated speed rpm : 1053
Tolerance 1/min : +- 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 220.0
Tolerance
cm3/1000 strokes : +- 10.0
Check tolerance
cm3/1000S. : +- 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : +- 0.20
Del. quantity
cm3/1000 strokes : 20.0
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000S. : +- 6.0

N04

Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.10.94
Test oil : ISO 4113

Combination No. : 0402036744

Injection pump
Pump designation : PES6P120A720/3LS3255
EP type number : 0412026739

Governor
Governor design. : RQV300...1000PA876
: -12
Governor no. : 0421813897

Cust. part No. : 3-7039

Customer-spec. information
Customer : MAN
Motor : D2866LF05
Power KW : 272.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750067

N05

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 0.00
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 700

Del. quantity
cm³/1000 strokes : 50.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spreed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 700

Rack travel in mm : 15.15
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 300

Rack travel in mm : 5.00
Tolerance mm : +- 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1

N06

Rated speed rpm : 1100

Rack travel in mm : 16.50
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 302.0
tolerance degree : +- 4.0

rack travel mm : 14.10
Rated speed rpm : 1045
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1165
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 258.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : +- 0.10

Rated speed rpm : 200

CRT mm min. : > 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.15
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 15.15
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 8.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 15.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 12.10
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 470
rack travel mm : 14.20
Tolerance mm : \pm 0.20

Pressure hPa : 110
rack travel mm : 12.35
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Spreed
Tolerance
cm³/1000 strokes : 10.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 139.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 14.10
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.11.94
Test oil : ISO 4113

Combination No. : 0402646773

Injection pump
Pump designation : PE6P120A320LS7846
EP type number : 0412626865

Governor
Governor design. : RQV300...1050PA1033
: -15
Governor no. : 0421814120

Cust. part No. : 0250747202

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 LA
Power KW : 230.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.00
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.29
Tolerance mm : \pm 0.20

Rated speed rpm : 1107
guide sleeve
travel mm : 8.52
Tolerance mm : \pm 0.15

Rated speed rpm : 558
guide sleeve
travel mm : 4.53
Tolerance mm : \pm 0.25

Rated speed rpm : 608

guide sleeve
travel mm : 5.03
Tolerance mm : \pm 0.25

Rated speed rpm : 820
guide sleeve
travel mm : 6.13
Tolerance mm : \pm 0.25

Rated speed rpm : 1183
guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1280
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1160

Rack travel in mm : 1.70
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 231.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : \pm 4.0

rack travel mm : 12.00
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

rack travel mm	:	4.00
Rated speed rpm	:	1170
Tolerance 1/min	:	+ 15
rack travel mm	:	0.75
Tolerance mm	:	+ 0.75
Rated speed rpm	:	1300

LOW IDLE

control lever		
position degree	:	83.0
tolerance degree	:	+ 4.0

Testing:

Rated speed rpm	:	300
rack travel mm	:	5.20
Tolerance mm	:	+ 0.10

Rated speed rpm	:	200
CRT mm min.	:	> 8.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm	:	350
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TORQUE CONTROL

Rated speed rpm	:	700
rack travel mm	:	13.00
Tolerance mm	:	+ 0.05

Rated speed rpm	:	1050
rack travel mm	:	13.00
Tolerance mm	:	+ 0.10

Rated speed rpm	:	400
rack travel mm	:	11.80
Tolerance mm	:	+ 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	:	400
Pressure hPa	:	1000
rack travel mm	:	13.00
Tolerance mm	:	+ 0.05

MEASUREMENT

Pressure hPa	:	-
Rated speed rpm	:	400
rack travel mm	:	10.40
Tolerance mm	:	+ 0.15

Rated speed rpm	:	400
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Pressure hPa	:	400
rack travel mm	:	11.80
Tolerance mm	:	+ 0.10

Pressure hPa	:	600
rack travel mm	:	12.80
Tolerance mm	:	+ 0.10

START CUT-OUT

Rated speed rpm	:	> 100
Check		
speed 1/min	:	> 80
Rated speed rpm	:	< 220
Check		
speed 1/min	:	< 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure		
hPa	:	1000
Rated speed rpm	:	1050
Del. quantity		
cm ³ /1000 strokes	:	228.0
Tolerance		
cm ³ /1000 strokes	:	+ 2.0
Check tolerance		
cm ³ /1000S.	:	+ 5.0
Speed		
Tolerance		
cm ³ /1000 strokes	:	8.0
Check tolerance		
cm ³ /1000S.	:	12.0

Aneroid pressure		
hPa	:	400
Rated speed rpm	:	400
Del. quantity		
cm ³ /1000 strokes	:	172.0
Tolerance		
cm ³ /1000 strokes	:	+ 1.5
Check tolerance		
cm ³ /1000S.	:	+ 4.5

Aneroid pressure		
hPa	:	-
Rated speed rpm	:	500
Del. quantity		
cm ³ /1000 strokes	:	138.0
Tolerance		
cm ³ /1000 strokes	:	+ 1.0

Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1095
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.10.94
Test oil : ISO 4113
Combination No. : 0402736843
Injection pump
Pump designation : PES6P120A120RS7281
EP type number : 0412726890
Governor
Governor design. : RQV400...1250PA1060K
Governor no. : 0421815343

Cust. part No. : 3925086

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power KW : 130.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413086

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 0.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 160.5

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Speed
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 160.5
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

RATED SPEED

control lever
position degree : 64.0
tolerance degree : + 4.0

control lever
position degree : 117.0
tolerance degree : + 6.0

rack travel mm : 12.60
Rated speed rpm : 1325
Tolerance 1/min : + 15

rack travel mm : 4.00
Rated speed rpm : 1480
Tolerance 1/min : + 5

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 6.0

control lever
position degree : 19.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 420
rack travel mm : 6.00
Tolerance mm : + 0.20

Rated speed rpm : 300
CRT mm min. : > 7.70

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.65
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 11.90
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 11.60
Tolerance mm : + 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 13.65
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 10.60

Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 375
rack travel mm : 12.80
Tolerance mm : \pm 0.30

Pressure hPa : 260
rack travel mm : 11.70
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 280
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 131.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 111.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.60
Rated speed rpm : 1325
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.10.94
Test oil : ISO 4113
Combination No. : 0402736845
Injection pump
Pump designation : PES6P120A120RS7286
EP type number : 0412726894
Governor
Governor design. : RQV350...1100PA964
: -20K
Governor no. : 0421815352
Cust. part No. : 3922425

Customer-spec. information
Customer : CDC
Motor : 6CTA-A
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2417413086
Inlet press. bar : 2.0
Test nozzle holder
assembly : 1688901103
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 5.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 15.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 243.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 243.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 119.0
tolerance degree : + 6.0

rack travel mm : 13.60
Rated speed rpm : 1255
Tolerance 1/min : + 15

rack travel mm : 4.00
Rated speed rpm : 1400
Tolerance 1/min : + 5

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + 6.0

Testing:

Rated speed rpm : 350
rack travel mm : 6.60
Tolerance mm : + 0.20

Rated speed rpm : 275

CRT mm min. : > 8.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 15.25
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 13.40
Tolerance mm : + 0.20

Rated speed rpm : 1200
rack travel mm : 14.70
Tolerance mm : + 0.10

Rated speed rpm : 750
rack travel mm : 13.70
Tolerance mm : + 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 15.25
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 9.20
Tolerance mm : + 0.20

Rated speed rpm : 1100

Pressure hPa : 715
rack travel mm : 13.80
Tolerance mm : \pm 0.20

Pressure hPa : 335
rack travel mm : 10.95
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 290
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 211.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.60
Rated speed rpm : 1255
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.50

Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

Note remarks

Edition : 13.10.94
Test oil : ISO 4113

Injection pump
Pump designation : PES6P120A120RS7332
EP type number : 0412726909

Cust. part No. : 3927924

Customer : CDC
Motor : 6CTA-A
Power KW : 205.0

Test oil inlet		
temp. °C	:	40
Tolerance °C	:	± 2.0

Test nozzle holder assembly : 1688901103

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

Firing order : 1- 5- 3- 6- 2-
: 4

```
Tolerance      : +- 0.50
Check
tolerance °NW  : +- 0.75
```

```

°NW after s.o.d. :      5.5
Tolerance         : +  0.10
Check
tolerance °NW     : +  0.23

```

Rack travel in mm : 15.15
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 235.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Speed Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
Aneroid pressure hPa	: 1200
Del. quantity cm ³ /1000 strokes	: 235.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Speed Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

RATED SPEED

control lever position degree	: 118.0
tolerance degree	: ± 6.0
rack travel mm	: 13.50
Rated speed rpm	: 1155
Tolerance 1/min	: ± 15
rack travel mm	: 4.00
Rated speed rpm	: 1300
Tolerance 1/min	: ± 5
rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 1400

N20

LOW IDLE

control lever position degree	: 69.0
tolerance degree	: ± 6.0

Testing:

Rated speed rpm	: 350
rack travel mm	: 6.80
Tolerance mm	: ± 0.10

Rated speed rpm	: 275
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CRT mm min.	: > 8.20
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CONTINUOUS-ACTION CONTROL

Rated speed rpm	: 425
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TORQUE CONTROL

Rated speed rpm	: 1000
rack travel mm	: 15.15
Tolerance mm	: ± 0.05

Rated speed rpm	: 650
rack travel mm	: 13.70
Tolerance mm	: ± 0.20

Rated speed rpm	: 1100
rack travel mm	: 14.60
Tolerance mm	: ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm	: 1000
Pressure hPa	: 1200
rack travel mm	: 15.15
Tolerance mm	: ± 0.05

MEASUREMENT

Rated speed rpm	: 1000
Pressure hPa	: 825
rack travel mm	: 13.50
Tolerance mm	: ± 0.20
Pressure hPa	: 370

rack travel mm : 10.75
Tolerance mm : \pm 0.05

Check tolerance
cm³/1000S. : \pm 25.0

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 290
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 210.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 96.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.50
Rated speed rpm : 1155
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : \pm 20.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.10.94
Test oil : ISO 4113
Combination No. : 0403466148
Injection pump
Pump designation : PES6MW100/120RS1137
: -2
EP type number : 0413406180
Governor
Governor design. : RSV550...1100MW2A335
: -8
Governor no. : 0420085244
Cust. part No. : 3 292 184

Customer-spec. information
Customer : CDC
Motor : 6CTA-830/2188E
Power KW : 209.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750014
Outside diameter : 6.0

N22

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 3.55
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
°NW after s.o.d. : 9.0
S.o.d. blocking
Barrel no. : 1
°NW after s.o.d. : 9.0

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 14.70

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 175.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

2nd speed rpm : 550

Rack travel in mm : 6.60

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.55
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 175.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 92.0
tolerance degree : \pm 4.0

rack travel mm : 13.70
Rated speed rpm : 1165
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1235
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1245

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 550
rack travel mm : 6.60
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.70
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 15.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 15.40
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 900
rack travel mm : 14.80
Tolerance mm : \pm 0.20

Pressure hPa : 500
rack travel mm : 13.00
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 102.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 13.70
Rated speed rpm : 1165
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 550
rack travel mm : 6.60
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.10.94
Test oil : ISO 4113

Combination No. : 0403476104

Injection pump
Pump designation : PES6MW100/720RS1131
EP type number : 0413406123

Governor
Governor design. : RSV350...1200MWOA342
 : -7
Governor no. : 0420085170

Cust. part No. : 0210746602

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 A
Power KW : 100.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 10.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 75.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

Spreed	
Tolerance	
cm3/1000 strokes :	3.5
Check tolerance	
cm3/1000S. :	6.0
Del. quantity	
cm3/1000 strokes :	11.0
Tolerance	
cm3/1000 strokes : +	2.0
Check tolerance	
cm3/1000S. : +	4.5
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
Check tolerance	
cm3/1000S. :	5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree :	- 3
Rated speed rpm :	800
Rack travel in mm :	
Tolerance mm :	+ 0.35
governor spring	
pre-tension	
click setting x :	5.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1200
Aneroid pressure	
hPa :	750
Del. quantity	
cm3/1000 strokes :	75.0
Tolerance	
cm3/1000 strokes : +	1.0
Check tolerance	
cm3/1000S. : +	3.0
Spreed	
Tolerance	
cm3/1000 strokes :	3.5
Check tolerance	
cm3/1000S. :	6.0

RATED SPEED

N26

control lever	
position degree :	97.0
tolerance degree : +	4.0
rack travel mm :	
Tolerance mm : +	0.70
Rated speed rpm :	1450
rack travel mm :	
Rated speed rpm :	1325
rack travel mm :	
Rated speed rpm :	1245
Tolerance 1/min : +	8

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm :	350
rack travel mm :	6.15

Testing:

rack travel mm :	0.00
Rated speed rpm :	490
Tolerance 1/min : +	40
Rated speed rpm :	
100	
CRT mm min. :	> 19.00

TORQUE CONTROL

Rated speed rpm :	1200
rack travel mm :	10.50
Tolerance mm : +	0.05
Rated speed rpm :	
600	
rack travel mm :	11.35
Tolerance mm : +	0.10
Rated speed rpm :	
1000	
rack travel mm :	11.00
Tolerance mm : +	0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm :	500
Pressure hPa :	750
rack travel mm :	1.35

Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.00
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 260
rack travel mm : 11.00
Tolerance mm : \pm 0.10

Pressure hPa : 150
rack travel mm : 10.35
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 750
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 69.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5